The Bradshaw Lecture
ON
ACUTE HÆMORRHAGIC PANCREATITIS:
WITH REMARKS ON THE ETIOLOGY OF CHRONIC PANCREATITIS.

Delivered before the Royal College of Surgeons of England,

BY SIR FREDERIC EVE, F.R.C.S. ENG.,
CONSULTING SURGEON TO THE LONDON HOSPITAL AND TO THE EVELINA HOSPITAL.

MR. PRESIDENT AND GENTLEMEN,—Ten years have passed since Mayo Robson, who had made this subject his own, discoursed in this theatre on pancreatitis. During that period so much light has been thrown on the subject by the experimental pathologist and the clinician that no excuse is required for reopening it.

ACUTE PANCREATITIS.

The macroscopic changes of acute hæmorrhagic pancreatitis are extremely characteristic and find no counterpart in any other organ.

Macroscopic Appearances.

In the earlier stages the pancreas is swollen, friable, and mottled red or brown to black with hæmorrhages, which lie chiefly near the surface or in the interstitial connective tissue. Areas of opaque white or yellow fat necrosis are observed in the peripancreatic fat and in that of the septa. They are also commonly met with in the fat of the omentum and mesentery. In some cases their distribution is very wide and fat necrosis may be seen in the subperitoneal fat of the abdominal wall, retroperitoneal adipose tissue, and even in the subpericardial and subpleural fat. A sanguineous or sero-sanguineous effusion is encountered in the lesser cavity of the peritoneum. This fluid is at first often sterile and contains products of pancreatic secretion, but it soon becomes infected; and in cases of some duration or even at an early stage in some very acute cases septic peritonitis exists.

If the patient survives varying degrees of necrotic and of suppurative changes are observed in and around the pancreas. Cases have been recorded in which the pancreas was necrosed and sequestrated in its entirety. This may have occurred, but Dr. Turnbull informs me that the sequestered necrotic masses he has met with were composed of blocks of peripancreatic adipose tissue and not of the pancreas itself. In two cases the house surgeon assured him that the whole pancreas had sloughed through a laparotomy wound, but in both instances the pancreas was found in its normal position at the necropsy.

Suppuration of a diffuse character occurs mainly in the tissue around the pancreas; at times, in less acute cases, a localised abscess forms in the pancreas itself.

The original subdivision by Fitz of acute pancreatitis into hæmorrhagic, gangrenous, and suppurative, merely represents the outstanding pathological features of different cases exhibiting varying stages and degrees of the malady. The hæmorrhages are always associated with necroses, although one may be more conspicuous than the other; and they are both the primary result of the same morbid process. This, of course, does not imply that a primary hæmorrhage into the pancreas from changes in the blood or blood-vessels never occurs; but such an apoplexy would be distinct from acute hæmorrhagic pancreatitis.

Histology.

The specimens I have studied confirm the description of the histological appearances given by Opie.[1] The chief features are: Areas of necrosis involving the parenchyma and also the interlobular septa; hæmorrhages most abundant about the periphery of the gland and around the necrotic areas; in addition, a diffuse infiltration of the septa, and, to a less extent, the gland substance with red corpuscles; there are also patches of fat necrosis involving the periglandular fat and the adipose tissue in the septa.

Of six specimens in the Pathological Institute of the London Hospital all but one showed definite evidence of inflammation, such as masses of polymorphonuclear leucocytes and areas of purulent infiltration around patches of necrosis, in the septa and beneath the peritoneum. The veins in some instances contained red or mixed thrombi, and occasionally the arteries were thrombosed.

In one case only out of six the leucocytic infiltration was very restricted, and limited to a few areas around necroses, although the patient died on the sixth day, while in all the others death occurred on or before the fourth day. Opie, among five specimens examined microscopically, observed one in which there was little or no inflammatory reaction.[2]

The Pancreatic Secretion and its Activation.

Some writers regard all the changes in acute pancreatitis as the result of the action of the pancreatic secretion on the gland. Chiari[3] describes it as a tryptic autodigestion; others (Fitz, Körte) regard the disease as an acute hæmorrhagic inflammation leading to necrosis. Guleke recognises two forms of the disease—a necrotic form, which he calls "pancreatic necrosis"; and an inflammatory form, provoked by bacterial inflammation, which he names "acute pancreatitis." He considers that the two forms are not sharply defined.

I propose to show that both the digestive and the inflammatory hypotheses are in part true, in that the process in the initial stage is due to a septic or bacterial infection, which not only lowers the resistance of and damages the gland tissue, but also liberates trypsin. The action of this proteolytic ferment, together with that of the steapsin, give to the morbid process its characteristic changes.

The pancreatic juice presents this peculiarity, that when secreted its principal digestive agent is inert. The trypsin or proteolytic enzyme is secreted as an inactive substance—trypsinogen—and this is activated or transformed into trypsin by enterokinase, a substance said to be an enzyme, which is produced by the intestinal mucous membrane. The activation of the pancreatic secretion takes place after it is poured into the intestine, and therefore under normal circumstances the pancreas runs no danger af self-digestion.

According to Professor Starling, the juice obtained from the pancreatic duct by the use of secretin contains only trypsinogen. And Dr. H. M. Vernon, whose work on the pancreatic secretion is well known, writes to me that "probably under ordinary circumstances enterokinase is the only agent that can start the activation of trypsinogen; but both juice and extracts contain also another ferment in zymogen form, which, when set free, is much more

powerful than enterokinase. So long as this ferment is present as zymogen the juice will remain inactive, whether in the ducts or elsewhere, and it is only when it is rendered active by the slow action of free trypsin that it is able to exert its rapid activating influence on trypsinogen."

This new fact, just discovered by Dr. Vernon, would appear at first sight to have no bearing on the etiology of acute pancreatitis, for the trypsin is, under normal conditions, developed outside the pancreas by the action of the enterokinase of the succus entericus.

It must be taken in conjunction with an observation by Mellanby and Woolley,[4] that bacillus coli and other intestinal flora are capable of activating pancreatic juice. These bacteria, according to Dr. Vernon, secrete powerful proteolytic ferments similar to trypsin, and he holds that the ferments secreted by them liberate an activator from the zymogen above referred to, and that it is this, and not enterokinase, which produces the effect observed.

To put the matter shortly, there is, on physiological grounds, good reason for believing that bacteria, and especially the bacillus coli, are capable of activating the pancreatic secretion independently of enterokinase. This, as we shall subsequently see, is entirely in accord with the results obtained by experiments on the artificial production of acute pancreatitis.

In addition to an amylolytic enzyme, the pancreatic juice also contains a fat-splitting enzyme, steapsin, capable of splitting neutral fats into fatty acids and glycerine, and it is this ferment which causes the fat necrosis. Bile increases the activity of steapsin two-fold (Neucke and Bremo). This is corroborated by Mellanby and Woolley, and, as we shall see, is another fact having an important pathological bearing.

Experimental Pathology.

Opie was the first to show that there was a definite relation between cholelithiasis and acute pancreatitis. In a necropsy on a case of Halsted's he found a gall-stone impacted in and filling the diverticulum. In a subsequent case a small stone blocked the orifice of the diverticulum but did not fill it, so that a direct channel was formed between the biliary and the pancreatic ducts. (Fig. 1.) That

FIG. 1.

Diagram, after Opie, to show a calculus blocking the papilla, and permitting of a free channel between *d.c.*, the ductus choledochus, and *d.w.*, the duct of Wirsung.

bile had flowed into the pancreatic duct was demonstrated by the duct being stained bright green. Acting on this hint he injected bile into the pancreatic duct of dogs, and found that the injection of 5 c.c. caused death with hæmorrhagic inflammation and fat necrosis. This at first sight conclusive fact was only the starting point of a long series of experiments. So many have been made with various substances that time will only permit allusion to a few of them.

At the outset it may be remarked that many of these experiments, although resulting in a condition resembling acute hæmorrhagic pancreatitis, do not reproduce the conditions existing during life. The pressure of the secretion of the bile and pancreatic juice is very low, even supposing, as Flexner suggests, that the bile pressure is accentuated by contraction of the gall-bladder; whereas in experiments the injection is made with a syringe, and considerable amounts, 5 or 10 c.c., were often used. That the amount injected has a relation to the result was shown by Opie and many others with bile. Death did not follow the use of smaller amounts than 5 c.c., and the changes produced in the organ were less widespread and severe. The pancreas is a very loose gland, the walls of the terminal ducts extremely thin, so that fluids under slight pressure would readily be extravasated into the gland tissue.

Many of the substances employed in experiments—zinc chloride, nitric and chromic acid—would act as irritants to the walls of the blood-vessels and gland cells, and produce hæmorrhages and necrosis. Flexner showed that the action of bile, which will dissolve red blood corpuscles, is due to the cytolytic property of the biliary salts. Olive oil, injected with positive results by Hess and others, owes its action to the liberation of fatty acids, which are extremely irritating to the tissues.

Other substances employed are not only irritants, but may also activate the pancreatic juice; for example, solutions of hydrochloric acid to imitate gastric juice. Dr. Vernon informs me that if pancreatic juice be partly neutralised by hydrochloric acid it spontaneously activates itself. Mellanby and Woolley also state that removal of the alkali of pancreatic juice by neutralisation with hydrochloric acid produces rapid activation. To the same category belong solutions of various species of bacteria injected by a number of experimenters. Inert substances, such as blood, blood serum, glycerine, paraffin, and agar-agar, gave a negative result.

Starling failed to induce any change in the gland by injecting enterokinase into its duct. He used succus entericus freed from micro-organisms by filtering through porcelain. Ligature of the duct of Wirsung causes no change beyond fibrosis, probably a fibrotic atrophy. By an exhaustive series of experiments on dogs, Polya[5] conclusively proved that the pathological picture of acute hæmorrhagic pancreatitis can be reproduced by injecting solutions of active pancreatic extract and pancreatic juice.

Among 33 dogs injected, 19 died within 24 hours and 4 others within six days. In most of these animals punctiform hæmorrhages appeared on the surface of the pancreas immediately after the injection; these quickly extended over the greater part of the gland. The animals died in an apathetic condition with laboured and rapid respiration, and cramps were often observed. Necropsies showed effusion of blood-stained serum into the peritoneal cavity and widespread fat necrosis. The pancreas was greatly swollen and more or less infiltrated with blood. Microscopically there were varying degrees of parenchymatous digestion up to complete necrosis, in addition to hæmorrhages. Trypsin completely destroyed by heat gave negative results. The intensity of the lesions depended on the proteolytic activity of the trypsin, not on the quantity of solution injected; 2 or 3 c.c., or even 1 c.c., of an active solution caused death. The action of trypsin is a local one, producing œdema, hæmorrhages, and necrosis. Other experimenters found that the same changes ensue on

injecting solutions containing trypsin into various structures, as peritoneum, skin, subcutaneous tissue, and the tongue of frogs. Polya also injected intestinal contents, cultures of bacteria, and bile infected with bacteria. He arrived at the following conclusions. Typical pancreatic necrosis with hæmorrhages, fat necrosis, and a rapidly fatal course may be originated most certainly with strongly active trypsin solution, less constantly by duodenal contents and by bile mixed with bacteria, rarely by the contents of intestinal fistulæ and extract of intestinal mucous membrane, and only exceptionally by bacteria alone. His experiments with infected bile showed that in small quantity it gave rise to as extensive changes (that is, pancreatitis and fat necrosis) as a large quantity of normal bile. After the injection of cultures of bacteria or filtrates of cultures, suppurative interstitial inflammations without necrosis were for the most part observed, and in one-third of the cases the pancreas remained normal.

The inconclusive results obtained by the injections of bacteria probably, as Nordmann suggests, were due to the fact that he did not occlude the orifices of both pancreatic ducts before making the injection. (See Fig. 2.) Nevertheless, Polya concluded that bacteria are capable of activating the pancreatic secretion and that their activating power is increased by bile. With regard to the latter point, Professor Starling assures me that bile is not an activator; and it may be noted that Polya does not mention having tested the activating power of bacteria experimentally with juice from pancreatic fistulæ. Polya's experiments, however, demonstrate in a striking manner the master rôle played by auto-digestion in the production of acute hæmorrhagic pancreatitis, although the changes induced by the injection of trypsin differed from the majority of cases of acute pancreatitis in man, in that no leucocytic infiltration was observed.

As regards the possibility of duodenal secretion causing acute pancreatitis the evidence is all against the assumption that it regurgitates, except in very rare instances, into the pancreatic ducts. The papilla is provided with a sphincter. Hess failed to produce pancreatitis by putting a cannula in the papilla unless the duodenum was actually occluded on the distal side. And the device of inserting a silk thread from the duodenum through the papilla into the pancreatic duct also failed.

Experiments on Relation of Cholelithiasis and Acute Pancreatitis.

Nordmann[6] instituted some further experiments with the object of explaining the relation between cholelithiasis and acute pancreatitis. He demonstrated that two factors are necessary for the production of acute hæmorrhagic pancreatitis: 1. There must be complete stasis of the pancreatic juice within the ducts. 2. Bacteria with or without admixture of bile must gain access to the stagnant secretion and multiply in it. To understand these experiments it must be explained that in dogs the pancreas has two ducts which anastomose freely in the gland. (Fig. 2.) The upper and smaller duct opens with the common bile duct into the ampulla as in man. The chief duct opens on the duodenum 3 to 5 cm. lower down. In order to produce any change as the result of injecting bacteria, it was necessary that both ducts should be occluded. If the lower duct were left open the result was negative. Nordmann closed both ducts by running a suture of silkworm gut around their orifices. Bile was thus allowed to regurgitate from the ampulla into the pancreatic duct, yet no morbid change resulted, although the pancreatic secretion and the pancreatic duct were both stained with bile. But when, after closure of the pancreatic ducts, bacteria were injected into the gall-bladder, typical hæmorrhagic pancreatitis was produced.

The ampulla of dogs is often so small that a suture which closes the papilla also occludes the ampulla and shuts off the communication between the bile and pancreatic ducts. Nevertheless, even when this occurred the introduction of bacteria into the gall-bladder was followed by positive results. Evidently bacteria were able to wander

FIG. 2.

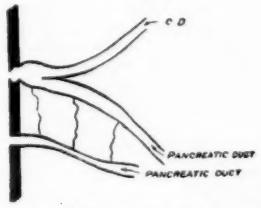


Diagram (after Nordmann) to show the arrangement of the pancreatic ducts in a dog. C D, Ductus choledochus.

through the intrapancreatic portion of the bile-duct into the duct of Wirsung. Nordmann in his experiments injected into the gall-bladder 0·5 c.c. of a 24 hours' broth culture of mixed bacteria from the fæces of a dog. In other cases streptococci, staphylococci, or bacillus coli from man were used, but the results were not so generally positive.

The animals died in 48 to 65 hours, and the clinical course of the malady, together with the macroscopic and microscopic changes, corresponded with those of acute hæmorrhagic pancreatitis. In nearly half the cases there was a yellow colouring of the pancreatic duct. Collections of leucocytes were observed at the margins of the necrotic patches, but never in the middle of them. This corresponds with the description given above of the histological changes in acute pancreatitis in man. Wherever a hæmorrhage was found he always observed near it a necrosis. Nordmann can find no reason for believing that there is ever primarily a digestion of intact tissue, as he never observed pure aseptic necrotic patches in the gland tissue. He "believes that an alteration of the tissue of the gland, possibly of a chemical nature, resulted through the dammed-up pancreatic secretion, containing bacteria and sometimes mixed with bile, and that the typical necrosis takes place on the basis of these antecedent local tissue damages, which are found especially in the interstitial tissue, but also in the glandular lobules." He further thinks that "these tissue disturbances can possibly be produced by very different causes—namely, by injuries, by hæmorrhages, in consequence of angioneurotic disturbances, ischæmia, &c." This conclusion, although necessarily vague, as he does not take into account the activating properties of bacteria, is very near the mark.

The Infective Theory of Acute Pancreatitis.

To sum up, the experiments and facts brought forward warrant the assertion that acute hæmorrhagic pancreatitis is, in the majority of cases, due to a bacterial infection. The bacteria appear to have a double action; they lower the resistance of the tissues by their toxins and by their proteolytic ferments activate the pancreatic juice, which

in its turn digests the damaged tissues. Obviously the process is largely due to the action of the pancreatic juice, or it would not be so constantly associated with fat necrosis. It must also be remembered that in certain cases in which diffusion of pancreatic secretion takes place without activation fat necrosis only ensues. This is seen conspicuously in certain cases of injury.

The infective organism is most commonly a bacillus of the colon group. This, according to Egdahl,[7] is usually found in acute pancreatitis. It is also that most frequently isolated from bile in infective conditions of the biliary passages. It may be noted that colon bacilli were found in the pancreas and blood of one of Mayo Robson's[21] cases, in which a necropsy was performed three hours after an operation for acute pancreatitis. A specimen of acute pancreatitis, due to an obstruction by a round worm of the papilla and the ducts of Wirsung and Santorini, showed very large numbers of bacillus coli in the necrotic parts, especially in the septa, and in enormous numbers under the peritoneal surface. Purulent infiltration was in this case well marked. Dr. Twort, to whom the sections were shown, agreed that the bacilli were of the colon group. It would be difficult to devise experimentally conditions more favourable than those existing in this case for the production of acute pancreatitis, or which more completely fulfil Nordmann's premises.

It has often been assumed that the hæmorrhages are due to digestion of the walls of the blood-vessels. The researches of Rickes, Natus, and Knape show that they are the result of stasis in the blood-vessels, and are of the nature of diapedesis hæmorrhages. Trypsin produces similar effects on the blood-vessel walls, as does a solution of salt of the same concentration as the pancreatic juice. The infective theory of the origin of acute pancreatitis explains peculiarities pointed out to me by Turnbull. In many necropsies in which there was no evidence of pancreatitis the terminal portion of the duct of Wirsung has been noticed to be stained by bile. Further, cancerous obstruction of the papilla of Vater may lead to extreme dilatation of the common bile-duct and duct of Wirsung without causing fat necrosis; therefore, neither obstruction to the pancreatic ducts nor entrance of bile into the pancreatic ducts do by themselves produce acute pancreatitis.

Lymphatic Origin of Pancreatitis.

It has been shown that a free communication exists between the lymphatics of the pancreas and those of the gall-bladder by means of the glands about the head of the pancreas, and Deaver[8] has observed in pancreatitis striking evidence of inflammatory changes in these glands. Both he and Arnsperger have therefore developed the idea that infection may be conveyed from the gall-bladder to the pancreas by the lymphatics without any mechanical obstruction at the papilla. This appears to be excluded by an experiment of Nordmann. After closure of the pancreatic ducts he ligatured the common bile-duct distal to the gall-bladder and then injected bacteria into it. A cholangitis followed but no pancreatitis.

Etiology.

Let us now consider how the facts obtained in the laboratory fit in with those observed in disease.

Clinical experience bears out the conclusions that stasis and infection are the main elements in the causation of acute pancreatitis, and these are most commonly brought about by cholelithiasis. Egdahl, in an analysis of 105 cases, found that in 44 (42 per cent.) the disease followed gall-stones or suspected gall-stones. But in only three of these cases was the stone in or near the ampulla. In 44 cases of Körte cholelithiasis existed in 21 (47 per cent.), and in 16 consecutive cases analysed by Dietrich[9] cholelithiasis was found at the operation or necropsy in 8. Calculi occupied the common bile-duct only twice, and in both of these they were small and not impacted. Dietrich states that in his cases gall-stones were certainly excluded only three times (18·75 per cent.).

At the London Hospital during the five years 1907–12 there were 11 necropsies on cases of acute hæmorrhagic pancreatitis. Gall-stones were present seven times (63·6 per cent.), and a round worm (in a case of Mr. Rigby) occluded both pancreatic ducts in an eighth. In only one of these cases did the stone occupy the ampulla. In the remaining 6 cases the calculi were in the gall-bladder and were invariably multiple and small. In 2 cases there was a duodenal ulcer, and in 1 of these a constriction of the common bile-duct with dilatation of the pancreatic duct was noticed; therefore gall-stones or obstruction at the papilla existed in nearly 82 per cent. of the cases. The duct of Wirsung showed evidence of stasis of secretion, or of infection in 7 cases out of the 11. It may be observed that a true estimate of the causes at work is more likely to be obtained from necropsies than from operations performed under conditions of grave illness, when the condition of the patient may preclude a careful examination of the bile passages.

The exact mechanism by which the pancreas is infected evidently varies. The figures quoted above show that the direct regurgitation of infected bile into the duct of Wirsung, owing to the impaction of a small calculus in the ampulla, occurs only in a small proportion of cases—about 20 per cent. The requisite anatomical conditions are shown in Fig. 1, and exist only in 20 per cent. of subjects. According to the measurements by Opie of the diverticulum and of the orifice of the papilla, a stone sufficiently large to become impacted in the papilla would in 70 per cent. of cases also completely fill the diverticulum, so that no communication between the two ducts would be possible. This leaves 30 per cent. of cases, and from these must be deducted 10 per cent. in which the duct of

FIG. 3.

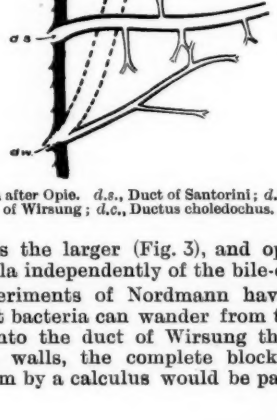


Diagram after Opie. *d.s.*, Duct of Santorini; *d.w.*, Duct of Wirsung; *d.c.*, Ductus choledochus.

Santorini is the larger (Fig. 3), and opens at the lesser papilla independently of the bile-duct.

The experiments of Nordmann having demonstrated that bacteria can wander from the common bile-duct into the duct of Wirsung through their contiguous walls, the complete blocking of the diverticulum by a calculus would be pathologically

effective to produce the disease without regurgitation of bile. Acute pancreatitis may presumably follow if the calculus remains sufficiently long in the diverticulum to cause stasis and infection of the pancreatic juice. This appears to have occurred in some cases of pancreatitis where a small stone has been found post mortem in the duodenum close to the papilla (Opie, also Balch and Smith). In this connexion the frequency with which small stones are found in the gall-bladder is significant, as shown in the London Hospital necropsies. The clinical histories of such cases tell of repeated attacks of biliary colic of short duration, coincident with the passage of small calculi down the common duct. Even when the diverticulum is absent and the two ducts open by separate orifices upon the summit of the bile papilla (Fig. 4) a calculus impacted in the

FIG. 4.

Diagram after Opie. Ductus choledochus and duct of Wirsung open by separate orifices.

termination of the common bile-duct might also occlude the pancreatic duct, as indicated in Fig. 5.

FIG. 5.

Diagram to show how a calculus lodged at the orifice of the ductus choledochus may obstruct the duct of Wirsung when the two ducts open by separate orifices.

For example, in New's case (quoted by Egdahl) gall-stones were present, but the duct of Wirsung had a separate opening.

It has been suggested that the passage of a stone may cause obstruction at the papilla from congestion. It is also probable that such a swelling and congestion may arise from a cholangitis due to the passage of infected bile. In this way a cholecystitis without cholelithiasis may bring about acute pancreatitis; and it is quite clear that chronic pancreatitis, the causes of which are allied to those of the acute variety, is frequently due to cholecystitis without calculi. Balch and Smith[10] record a case of acute pancreatitis in which the ampulla was plugged with inspissated mucus.

Egdahl believes that, next to cholelithiasis, gastro-intestinal diseases are the most common cause of acute pancreatitis. He thinks that retrojection of bile may be caused by intestinal disorders closing the papilla. As we have already seen, the retrojection of bile is not essential provided there is closure of the papilla with infection of the bile. An ascending infection of the biliary ducts would be likely to occur in gastro-duodenitis; 30 per cent of Egdahl's cases belonged to this group, and 17 out of 32 gave a history of alcoholism. Three of his cases were associated respectively with duodenal perforation, gastric ulcer, and poisoning by oxalic acid. In two of the 11 London Hospital necropsies a duodenal ulcer was present.

Acute pancreatitis may occasionally be due to regurgitation of duodenal secretion. This is more likely to occur through the orifice of the duct of Santorini, which is not provided with a sphincter. Opie quotes (p. 153) a striking case of a man in whom pancreatitis was preceded by alcoholic gastritis and vomiting. The duct of Santorini was the principal outlet of the gland, as in Fig. 3. Almost the entire gland was the seat of hæmorrhagic inflammation, and the part about the small duct of Wirsung was apparently the least changed part of the organ. The orifice of the duct of Santorini readily admitted a probe about 2 mm. in diameter. In another case (Bassett's) the lesion was limited to a small area in the head of the gland, drained by a small duct of Santorini. In two of Egdahl's cases acute pancreatitis was associated with enteric fever and in 14 with mumps. The tendency of the typhoid bacillus to infect the biliary tract probably explains the association of acute pancreatitis with this disease. I operated successfully on a case of abscess of the head of the pancreas during convalescence from enteric fever.

Sex and Age.

A collection of 295 cases from the literature shows that 63 per cent. of the cases are males and 37 per cent. females; the males therefore outnumber the females by nearly one-third. Deaver states that the number of males is twice as great as the females, but this is evidently an over-estimate. The point is of importance, as it involves the relation of cholelithiasis to acute pancreatitis, the former being much commoner in women. The preponderance of males in acute pancreatitis is probably due to the fact that gastro-duodenal catarrh—especially the alcoholic form—and duodenal ulcer are more frequent among them. The larger number of cases occur between the ages of 45 and 65. The addition of Dietrich's cases to those of the London Hospital shows that over 53 per cent. occurred during this period. In Körte's cases the greater number had reached the fourth or fifth decade. As an unusual circumstance it may be mentioned that 8 (30 per cent.) of the London Hospital patients were in the third decade.

CHRONIC PANCREATITIS.

Although we are mainly concerned with the subject of acute pancreatitis, it will not be out of place if we discuss briefly the pathology and etiology of chronic pancreatitis in the light of our review of the pathology of the former.

The relation of these two affections is far closer than would appear at first sight from a study of their morbid anatomy. Both are mainly the result of infection of the biliary and pancreatic ducts. Although they usually originate independently, yet a subacute pancreatitis may prove the starting-point of the chronic variety; and, on the contrary, the acute may be engrafted on a gland long affected with sclerotic changes. A microscopic specimen from the Pathological Institute of the London Hospital illustrates the close relation as regards causation between acute and chronic pancreatitis. It demonstrates an acute pancreatitis supervening on a chronic. The patient, a woman, aged 49, had suffered for six months from biliary colic, and was jaundiced after the last attack. At an operation two large stones were found in the cystic duct, some smaller ones in the gall-bladder, and some gritty matter in the common bile duct was pushed down by a probe which freely entered the duodenum. The gall-bladder was much thickened and was removed; the

dilated common duct was drained. The patient became weaker, jaundice appeared with vomiting, and she died on the twelfth day after the operation. At the necropsy two calculi, which had probably receded during the operation into the hepatic duct, were found in the common bile-duct, and there were acute hæmorrhagic inflammation and fatty infiltration of the pancreas. On microscopic examination the ducts showed marked mucous catarrh. In parts were extensive hæmorrhages with destruction of the parenchyma from digestion—in fact, acute hæmorrhagic pancreatitis. In addition there was considerable interlobular and interacinar fibrosis with infiltration of the fibrous tissue with lymphocytes, neutrophile leucocytes, and some eosinophile leucocytes. In this case the occurrence of jaundice after the operation suggests that obstruction of the common bile-duct took place with acute infection of a pancreas already damaged by chronic infection due to calculi in the common bile-duct.

The work of numerous experimenters proves that an acute pancreatic lesion which does not end fatally may terminate in chronic pancreatitis or in sclerosis. To quote only one set of experiments, Whipple, Chaffee, and Fisher[11] found that the injection of 3 to 5 c.c. of bile into the pancreatic duct produced primarily an acute hæmorrhagic lesion and secondarily a chronic fibrous pancreatitis resulting from the healing of the acute inflammatory process. The pathological changes were controlled by exploratory laparotomies made respectively three and five weeks after the injection, at each of which a portion of pancreas was removed for microscopic examination, and some time subsequently a necropsy was made.

Nordmann, whose experiments have already been detailed, thought that in certain circumstances an inflammatory œdema was produced, which cleared up with complete recovery, but when cell infiltration was abundant the inflammatory changes gave rise to sclerosis; in other words, to chronic pancreatitis. I have observed clinically such a clearing up of an inflammatory œdema of the head of the pancreas. In the course of an operation for removal of a calculus from the common bile duct in a woman of 72 I found the head of the pancreas greatly swollen and softer than usual. A drainage tube was placed in the common bile duct. The patient died two weeks later from purulent bronchiectasis and pneumonia. Dr. Bartlett, who made a special examination of the pancreas for me, could find no microscopic change in the head of the gland. The gall-bladder and ducts contained muco-pus, and bile obtained at the operation gave cultures of colon bacilli.

Etiology.

Like acute pancreatitis, the chronic form is closely related to cholelithiasis, especially to stones in the common duct, which would cause intermittent stasis of biliary and pancreatic secretion, and be associated with biliary infection. The often-quoted figures of the Mayos give 2611 operations on the gall-bladder and bile tract, with involvement of the pancreas in 200 cases (7·6 per cent.), and in 325 operations on the common and hepatic ducts the pancreas was affected in 22 per cent. Mayo Robson estimated that chronic pancreatitis existed in 60 per cent. of cases of calculi in the common bile duct.

Apart from the cases of chronic pancreatitis associated with cirrhosis of the liver, which I do not feel competent to discuss, a considerable number are unaccompanied by gall-stone disease. In many of these, however, cholecystitis exists, for in 73 cases of chronic pancreatitis in Deaver's[12] practice cholelithiasis existed in 35, and in 38 no calculi were present at the time of the operation. But of the non-calculus group 12 had demonstrable changes in the gall-bladder, or, in other words, cholecystitis was present. The results of the operation of draining the gall-bladder for chronic pancreatitis show that in a definite proportion of cases the operation fails on account of a chronic form of cholecystitis which is not cured by drainage alone, although complete relief is obtained by cholecystenterostomy (W. J. Mayo[22] and Guerry[23]).

Morbid conditions of the duodenum play as important a rôle in the causation of chronic pancreatitis as in the acute form; and it has already been pointed out that gastro-duodenitis and ulcers favour the occurrence of an ascending infection of the biliary ducts, and that intermittent stasis may result thereby from congestion at the papilla.

Cancer of the head of the pancreas is in rare instances a cause of chronic pancreatitis. This is more readily understood when it is stated that Turnbull's records at the London Hospital show that practically all cases of so-called carcinoma of the head of the pancreas originate in the biliary or pancreatic ducts, and therefore from an early stage must cause stasis of the secretions in these ducts. Certain cases of chronic pancreatitis coincident with gastric and duodenal ulcers are evidently due to direct microbic infection, either by extension from the base of the ulcer when it is adherent to the pancreas, or perhaps in some instances by the lymphatics.

Cammidge[13] gives the following summary of the causes of chronic pancreatitis from his notes of 414 cases. Fifty-one per cent. were secondary to some morbid condition of the digestive tract; 37 per cent. were associated with diseases of the biliary apparatus, chiefly gall-stones; 8 per cent. were due to deposits of malignant disease from a primary deposit in some other organ; and 4 per cent. were probably dependent upon disease of the circulatory system. The proportion of cases due to diseases of the biliary apparatus is probably too low. The experiences of surgeons would probably show a larger number of cases dependent on this cause, many examples of chronic pancreatitis being discovered at operations for the relief of obvious biliary disease.

SYMPTOMS OF ACUTE PANCREATITIS.

In order to avoid the not uncommon error of repeating stereotyped descriptions of other authors, I have carefully analysed 24 consecutive cases at the London Hospital of which the notes were complete, together with the abstracts of 16 cases given as an appendix to Dietrich's paper, making a total of 40 cases.

Premonitory Symptoms.

Over one-half had premonitory symptoms of varying intensity. These consisted of attacks of pain in the upper abdomen, or occasionally over the abdomen generally (16 per cent.). As regards the cause of these attacks of pain, the symptoms and other indications lead to the conclusion that some of them were due to attacks of subacute pancreatitis. For example, in one London Hospital case several white spots, the remains of old fat necrosis, were observed in the subperitoneal fat at an operation for acute pancreatitis. This patient

had suffered with attacks of pain for three years prior to the operation.

Körte observed fat necrosis, although its significance was not recognised, in a patient operated on for gall-stones in 1895. At a second operation in 1896 for a stone in the common duct no signs of the former pancreatitis existed. Further, Körte saw four cases and Brentano three which were considered as examples of healed pancreatitis. The disappearance of fat necrosis in a short period has frequently been noted in experiments on animals. Polya observed after the injection of active trypsin into the pancreatic duct that in those animals in which a relaparotomy was done for inspection the areas of fat necrosis had disappeared between the laparotomy and their death. An animal which exhibited after laparotomy typical evidences of hæmorrhage and fat necrosis showed on post-mortem examination, 22 days later, that all these changes had disappeared. In animals which lived for a week after the experiment fat necrosis was never found.

The premonitory attacks of pain were in a like proportion of cases (16 per cent.) referred to the right side of the upper abdomen. In many instances the pain resembled and might be referred to cholelithiasis, and in a few to duodenal ulcer. But a fair proportion of patients shown subsequently to have gall-stone disease complained of no previous symptoms.

A few cases gave a history of indigestion and flatulence.

Symptoms.

These accord with the symptoms of the group of acute abdominal crises, and closely resemble those of perforation of gastric and duodenal ulcer, of the gall-bladder, or the appendix. Many cases have been mistaken for acute intestinal obstruction. The onset is sudden, with very severe pain in the epigastrium, persistent vomiting, usually constipation, tenderness, fulness and resistance in the upper abdomen, and gradually increasing distension; the pulse is rapid and weak; the temperature lower than the pulse-rate, and not infrequently subnormal with collapse.

Körte, whose experience is probably unrivalled, says that the one symptom which gives the most probable insight into the condition is tenderness across the epigastrium, and resistance over the pancreas. He adds that the most distinctive sign is epigastric peritonitis, with subsequent swelling in the left lumbar region. This was present in 18 of his cases in which a diagnosis was possible.

There being no pathognomonic sign the diagnosis is admittedly difficult and uncertain, yet Dietrich states that in 16 cases admitted during the last five years to the Hamburg-Eppendorf Hospital the nature of the malady was detected in the last 10. Obviously the difficulty must be greatest in very acute or in advanced cases, for in these there will be general abdominal tenderness and distension—in fact, the signs of general peritonitis. An analysis of the 40 cases mentioned above will indicate the frequency of the prominent symptoms. Vomiting was almost a constant symptom (80 per cent.), and was often severe and incessant. Constipation existed in 25 per cent., and was only marked in 5 cases. Diarrhœa was present in 3 cases, but in one of these the symptoms had existed 14 days.

Pain was almost constant, and in 50 per cent. was situated in the epigastrium or upper abdomen. In the other cases it was localised in the right hypochondrium, the right side of abdomen, or right iliac fossa; in others on the left side or left iliac fossa. Tenderness had much the same distribution as the pain. Distension existed in half the cases. The most important fact resulting from this review of cases is that a swelling was only observed in 7 (17·5 per cent.)—twice in the right hypochondrium (in one of these being a distended gall-bladder), thrice on the right side of the abdomen or to the right of the umbilicus, once on the left side of the abdomen, and once below the umbilicus. It may be observed that when pus forms around the pancreas it develops a retroperitoneal collection and presents in the left flank, or passes through the gastro-hepatic omentum and forms a left subphrenic abscess. Occasionally, as in a London Hospital case, it tracks retroperitoneally to the appendix region; a collection may also occur in the right kidney pouch, as it did in this case. Shivering was noted only twice. Jaundice was present in 5 cases (12·5 per cent.). Cyanosis, sometimes spoken of as a characteristic sign, was only present twice; one was an acute case of 24 hours' duration, while in the other the symptoms had lasted 14 days. Glycosuria was once noted, a trace of sugar being found in one of Dietrich's 16 cases. It existed in 8 of Körte's 44 cases. One patient of Körte developed diabetes one and a half years after extensive necrosis of the pancreas, and died eight years subsequent to the operations.

The discovery of fat necrosis during the operation is often the first definite indication of the nature of the malady. Its presence is very constant, but it was absent in 2 of Dietrich's 16 cases, one of these being a case operated on after 48 hours, and subsequently subjected to a post-mortem examination. The other, also an acute case of hæmorrhagic pancreatitis, recovered after an operation, performed 24 hours after the onset. Fat necrosis was stated to be absent in 4 of 27 consecutive London Hospital cases, and all were subacute. This sign was therefore absent only in 14 per cent. of cases.

Toxæmic Symptoms.

The general condition of patients with acute pancreatitis is indicative of an acute toxæmia.

Speese, Sailer, and Torrey performed experiments on dogs[14] to ascertain if the toxæmia was due to the presence of trypsin in the blood serum. Pancreatitis was induced by injecting 20 c.c. of oil. As a result they concluded that there is no reason to believe that the toxæmia of acute pancreatitis is caused by any absorption of the external secretion of the pancreas. But they succeeded in separating from the serum a substance lethal to guinea-pigs. They felt justified in saying that in acute pancreatitis the blood content in globulin is greatly increased, and that either the globulin itself, or substances adherent to it, constitute the toxic element causing death in this disease.

Cammidge's Reaction.

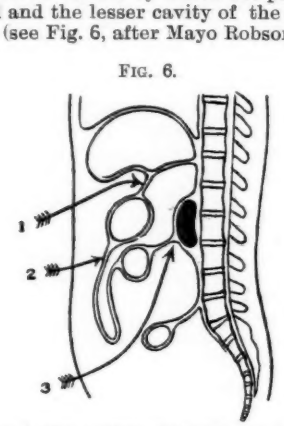
Both clinicians and experimentalists have arrived at the conclusion that this reaction is of no definite value in the diagnosis of acute pancreatitis. Körte found it negative in 7 out of 8 cases examined. Both Deaver, Ochsner, and Dietrich state that it was of no assistance. Whipple, Chaffee, and Fisher[15] tested it in acute pancreatitis of dogs induced experimentally. They concluded that this test was of little value in establishing a diagnosis of acute pancreatitis in dogs. If the test is negative it is pretty strong evidence against an acute pancreatitis; but a positive Cammidge test is not infrequent in

normal men and dogs. It is almost constantly present in chloroform poisoning in dogs, and may be present in cases of pneumonia, or in any condition where there are active cell destruction and autolysis. They add: "The method is open to various errors, and too much depends on the personal equation, particularly in the interpretation of the various crystals."

TREATMENT.

There exists such a complete agreement as to the treatment of acute pancreatitis that this portion of the subject may be briefly dealt with. Operation is indicated at the earliest moment that the disease is definitely suspected. Collapse should not be considered a legitimate cause of delay. Probably in the majority of cases this condition will only become deeper if operation be postponed; and our resources for combating shock have been considerably augmented during the last few years. A median or right rectus incision is the direct channel for settling the diagnosis and exposing the pancreas. The biliary passages also require examination. There are three routes by which the pancreas may be exposed and the lesser cavity of the peritoneum opened up (see Fig. 6, after Mayo Robson).

FIG. 6.



The peritoneal folds in relation to the pancreas. The arrows indicate three of the approaches to the gland. From "A System of Operative Surgery," edited by F. F. Burghard.

1. Above the stomach, through the lesser or gastro-hepatic omentum. This can only be conveniently employed when gastroptosis exists.

2. Below the stomach through the upper part of the gastro-colic omentum. This is the method of choice.

3. Through the transverse mesocolon. This is inadvisable as hæmorrhage may ensue owing to wounding of large vessels (see Dietrich, Case 8). The general peritoneal cavity is also less readily shut off.

4. In cases of localised abscess around or within the head of the pancreas, this may be exposed posteriorly by mobilising the duodenum, or anteriorly by cutting through the peritoneum passing over the pancreas from the duodenum.

5. The tail of the pancreas may be reached by a transverse lumbar incision in the left costo-vertebral angle. This route should be adopted when the existence of a left lumbar swelling indicates the presence of a retroperitoneal collection of pus. After exposure of the gland through an anterior incision it may also be used for the purpose of obtaining efficient drainage in cases of extensive necrosis, and it should never be omitted if there be a left lumbar swelling. In those cases where a left costo-vertebral incision is primarily employed for a swelling in the lumbar region the anterior incision should not usually be dispensed with, for, as W. J. Mayo points out,[16] the head of the pancreas is most often involved. The justice of this advice appears evident from Körte's cases, which gave a mortality of 33 per cent. for those treated by abdominal incisions and nearly 70 per cent. for cases in which a lumbar incision was adopted. The latter, however, were often cases operated on in the later stages. They included also those operated on by the transpleural method.

6. Finally, a left subphrenic collection of pus should be opened either through an epigastric incision or by the transpleural route.

The procedure generally followed after opening the abdomen is to pack off the lower part of the peritoneal cavity with gauze, open the lesser cavity of the peritoneum through the gastro-colic omentum, and mop up any collection of sero-sanguineous or sero-purulent fluid within it. The covering of the pancreas is divided, and blunt scarification made along its whole length, or over the part affected, sometimes only the head. Bleeding is stopped by underrunning vessels with catgut, or a gauze plug is fixed in position with catgut sutures. A drainage-tube is left in. If there is a quantity of fluid in the peritoneum a drain should be inserted above the pubes.

In those cases where a collection of pus exists, this should be drawn off by aspiration before the cavity is opened. A careful examination of the biliary apparatus is an essential part of the operation. Cholecystotomy with drainage should be performed for calculi in the gall-bladder or for cholecystitis; and choledochotomy with drainage should be carried out for calculi in the common duct, provided that the life of the patient is not imperilled by a prolongation of the operation. Cholecystectomy, if requisite, must be postponed till a later period.

RESULTS AND PROGNOSIS.

The mortality following operations for acute pancreatitis is still 40 to 60 per cent. But Ebner reports that of 20 cases not operated on only two recovered. In Dietrich's collection of 161 cases of various operators up to 1913, 98 died—a mortality of 61 per cent. These cases included 103 collected from literature by Körte in 1911. Körte's 34 personal cases, in which the pancreas was exposed, gave a mortality of 47 per cent. (18 recovered and 16 died).

During the five years 1908 to 1912 inclusive, 17 cases were operated on at the London Hospital with 11 deaths, a mortality of 64·9 per cent., while the series of 17 cases during the same period reported on by Dietrich gave a mortality of 77 per cent. The prognosis depends mainly on the acuteness of the malady and the period when operation is performed. Ultra-acute cases usually die with collapse in 24 to 72 hours, and extensive necrosis of the pancreas may be found as early as the third or fourth day.

Among the 6 London Hospital cases that recovered 4 were definitely subacute, and one of them was not operated on till the fourteenth day of his illness; in this case and another there was no fat necrosis. But in the two remaining cases, operated on respectively on the second and fifth days, there was necrosis with sloughing.

Körte's cases give a valuable indication of the effect of their duration on the prognosis. The

mortality in cases operated on in the first two weeks was 31 per cent.; of those operated on during the first three or four weeks 50 per cent.; of those operated on in the fifth and sixth weeks all died. In all cases operated on after the fourth week necrosis of the pancreas and pus were found. The prognosis in circumscribed abscess of the pancreas is favourable. Mayo Robson operated on 7 cases, with recovery in 6, though 2 of them succumbed later. The patient may survive the operation and die subsequently from suppuration, chronic toxæmia, and exhaustion. One of my own patients died nine weeks after the operation, although a counter opening was made for drainage in the left loin, in addition to an anterior incision. At death very offensive pus and necrotic material were still discharging from the posterior opening. Fistulæ exuding pancreatic secretion may remain for some time, but they usually close spontaneously. Another patient on whom I operated for pancreatitis occurring during convalescence from enteric fever still has a fistula some years after the operation. Hæmorrhage is not an uncommon complication. It occurred in 7 of Körte's cases (20·6 per cent.). The hæmorrhage always took place during the period of necrosis and pus formation, and was from the large arteries along the upper border of the pancreas—four times from the splenic artery itself. All Körte's patients died except one, who was saved by plugging the wound with gauze.

TRAUMA.

The results of injury to the pancreas are of particular interest on account of their bearing on the nature of acute pancreatitis and pancreatic necrosis. These injuries are usually produced by a blow on the epigastrium from a kick, or a blow from a buffer, shaft, &c., or from a wheel passing over the abdomen. Some are the result of stabs or gunshot wounds. Not infrequently other abdominal organs are also implicated. The symptoms for the most part resemble those of acute or subacute pancreatitis.

A study of the clinical history of uncomplicated cases appears to me to justify their division into three groups: 1. Cases with fat necrosis and serosanguineous or serous effusion into the lesser sac. These, as a rule, recover after laparotomy. 2. Cases with necrosis of the pancreas itself, hæmorrhages, fat necrosis, and, in some instances, peritonitis. These are often fatal even after a timely laparotomy. 3. Cases of injury followed by the formation of a pseudo-cyst.

The pancreatic juice within the normal gland possesses no active proteolytic ferment, therefore injuries causing extravasation of the juice might be expected to produce only fat necrosis. This expectation is borne out by the cases in Group 1 and by experimental injuries. Opie found that fat necrosis followed division between two ligatures of the pancreatic ducts of cats. The pancreatic tissue was evidently opened up in separating the pancreas from the duodenum, otherwise there could have been no escape of juice, for it may be remembered that simple aseptic ligature of the ducts produces only fibrotic atrophy. The extent of the distribution of the fat necrosis was proportionate to the length of life of the animal. The peritoneal exudate was sterile. Opie also produced fat necrosis by transplanting the duodenal end of the pancreatic duct into the subcutaneous tissue of the abdomen. As examples of Group 1 the following cases may be quoted:—

The wheel of a cart passed over the abdomen of a boy aged 6. Laparotomy ten days after the injury showed abundant localised serous effusion and fat necrosis, with a visible lesion of the pancreas. The fluid was sterile. Recovery.[17] Hagedorn observed two similar cases operated on respectively 24 hours and 17 days after the injury. Both recovered. In Hahn's case laparotomy revealed disseminated fat necrosis six months after a fall from a wagon. Recovery followed.

In Group 2 necrosis of the pancreas results either from destruction of its vitality or from interference with the circulation, owing to the severity of the injury; or, again, as the result of primary or secondary infection of the injured tissue.

Selberg,[18] in a patient who died on the twentieth day after the kick of a horse, found microscopic evidence of necrosis of the entire pancreas.

In Opie's case of stab wound the patient died of streptococcic peritonitis owing to a penetrating wound of the stomach, which was closed by operation. Around a puncture only of the pancreas there were found a hæmorrhagic area with hyaline necrosis of the parenchyma and foci of fat necrosis, apparently due to the septic wound of the pancreas.

Levin,[19] as the result of numerous experiments, found that crushing of a part of the pancreas with artery forceps, or section of the gland at its middle between double ligatures, produced no effect. But if the vitality of the gland was seriously interfered with as by crushing and subsequent ligature of the main vessels, or by the application of six or seven ligatures around it, the animals died with "acute pancreatitis" and sometimes fat necrosis. Levin remarks that "peritoneal infection, which frequently occurs in these experiments, may be due to extraneous infection or to infection from the duodenum through the pancreatic duct."

On analysing Levin's experiments I find that nearly 50 per cent. of these very severe lesions of the pancreas were not fatal, and the necropsies showed only interstitial pancreatitis. Another element—almost certainly primary or secondary infection—must therefore have come into play and determined the fatal issue in the remaining cases. This appears the more likely in view of our present knowledge that bacteria are capable of activating the pancreatic juice.

Treatment.

Exigencies of space permit me only to deal very briefly with this portion of my subject. The indication for operation is quite as definite in the case of serious injuries of the pancreas, whether from subcutaneous trauma or gunshot and stab wounds, as in acute pancreatitis. The diagnosis must necessarily be uncertain, especially as other organs may be injured. But this is of little importance in consideration of the fact that in most severe abdominal lesions laparotomy will be indicated. Von Mikulicz, in an admirable article on this subject,[20] specifies increasing anæmia, the physical signs of blood in the peritoneum, peritoneal irritation, and especially a steady accentuation of symptoms, as the indications of a severe injury to the pancreas.

After opening the abdomen hæmorrhage from the pancreas must be stopped by deep sutures or by the use of the tampon, the injured area being packed off with gauze and drained. A break in the continuity of the organ may permit of a closure with deep sutures. A careful search for wounds of other viscera is necessary in all cases. The peritoneal cavity should be washed out with normal salt solution, for in the majority of cases pancreatic secretion will have escaped into it. The pancreatic juice, even when aseptic, is said to be highly toxic and to lower the resistance of the peritoneum to micro-organisms.

Von Mikulicz collected 45 cases of pancreatic injury; 21 were penetrating wounds, and 24 subcutaneous wounds from blunt force. Of the penetrating variety, 12 were gunshot and 9 stab wounds. Five of the gunshot wounds were

operated on, with 2 deaths. The 7 that were not operated on died. The 9 stab wounds were all operated on with only 1 fatality. These favourable results were due to the fact that the pancreatic injury was really a prolapse in 7 cases; and in some of these only a minor lesion of the prolapsed portion was present. Of the 24 subcutaneous injuries, 13 were not operated upon, and all died. Eleven were submitted to operation and 7 recovered. The operations consisted in exposing the injured pancreas and in drainage.

In conclusion, I desire to express my indebtedness to Dr. Turnbull for much assistance and for generously placing the admirable records and the microscopic specimens of the Pathological Institute of the London Hospital at my disposal; my sincere thanks are also due to Professor Starling and Dr. H. M. Vernon for valuable information, and to Mr. E. C. Lindsay for making abstracts of hospital notes and records.

Bibliography.—1. Diseases of the Pancreas, p. 159. 2. Op. cit., p. 160. 3. Johns Hopkins Hospital Bulletin, 1911, p. 39. 4. Journal of Physiology, vol. xlvii., p. 357. 5. Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie, vol. xxiv., 1912, p. 1. 6. Archiv für Klinische Chirurgie, vol. cii., 1913, p. 66. 7. Johns Hopkins Hospital Bulletin, vol. xviii., p. 130. 8. New York Medical Journal, vol. xcv., 1912, p. 572. 9. Beiträge zur Klinischen Chirurgie, Band xcii., p. 322. 10. Boston Medical and Surgical Journal, 1910, vol. ii., p. 384. 11. Johns Hopkins Hospital Bulletin, vol. xxi., p. 339. 12. Transactions, College of Physicians, Philadelphia, vol. xxxiii., p. 83. 13. THE LANCET, 1911, vol. i., p. 1494. 14. Transactions, Association of American Physicians, vol. xxvi., p. 446. 15. Johns Hopkins Hospital Bulletin, vol. xxi., 1910, p. 339. 16. Surgery, Gynæcology, and Obstetrics, vol. vii., 1908, p. 608. 17. Dietrich, op. cit. 18. Berliner Medicinische Wochenschrift, vol. xxxviii., p. 923. 19. Journal of Medical Research, vol. xvi., 1907, p. 419. 20. Annals of Surgery, vol. xxxviii., 1903. 21. The Pancreas: Its Surgery and Pathology, 1907. 22. American Journal of Medical Science, April, 1914. 23. Journal of the American Medical Association, December, 1910.

SOME EXPERIENCES OF SHELL WOUNDS IN THE PRESENT WAR.

BY A. W. SHEEN, M.S. LOND., F.R.C.S. ENG.,

LIEUTENANT-COLONEL, ROYAL ARMY MEDICAL CORPS (TERRITORIAL FORCE); OFFICER COMMANDING WELSH HOSPITAL, NETLEY.

IT takes but little experience of shrapnel and other shell wounds, which when they get to hospital are almost always infected, to realise that the best thing to do is to leave them alone—that all aggressive surgery is a mistake, that foreign bodies *per se* do no harm, and that the laying open of fresh tissue areas is to be avoided. Amputations are unwise, simple removal of any nearly dissociated parts being sufficient, even if ends of bone are left protruding. If a previous formal amputation has been performed there is almost always free suppuration and flap retraction, with the necessity for reamputation later.

The best treatment is the boracic fomentation assiduously and properly applied; the lint should be wrung as dry as possible out of really boiling water, put on in at least two layers amply covering the wound and adjacent parts, well overlapped in its turn by the mackintosh, fixed so as to avoid displacement and permit of easy changing, and changed as often as every two hours in badly infected cases. There is no particular virtue in the boracic acid, but the pink colour of the lint emphasises its special use.

Where there is a wide wound, locally very foul, but with no spreading or general infection antiseptic sawdust[1] is a good dressing. When leaning over the bandage and smelling there is not the offensive odour of other dressings, but only a fragrant smell. The sawdust is best applied over a single layer of sterile gauze laid across the wound. The corners of the gauze are then brought over the sawdust. The dressing should be changed at least twice daily. "Pinus sylvestris medicatrix" is an impressive name for the soldier. The use of gauze plugs, sterile or medicated, is wrong; they become intensely foul, and cork up discharge. Drainage-tubes are only very occasionally necessary.

The employment of congestive treatment other than the fomentations—Bier's bandage or Bier's cup—should follow the usual principles of dealing with infected wounds. A high value is placed nowadays on peroxide of hydrogen, but I cannot satisfy myself that it has any special usefulness in these cases. It is very difficult to estimate the value of medications applied to wounds in removing infection and hastening repair, for cleansing and healing usually take place rapidly under congestion and natural processes.

Granulating and mildly infected wounds do well under sterile gauze wrung out of warm "parabolic" applied twice daily. Sterile wounds require a dab of tincture of iodine and a pad of sterile gauze daily or less often. Occasionally an obvious abscess requires opening, an ill-draining sinus enlarging, or a cellulitis incising. In the absence of constitutional disturbance it is well to wait for definite evidence of these conditions. Doubtful spots should not be incised if the temperature is normal.

The best procedure in ward dressings is as follows. The "dresser" wears rubber gloves throughout, the lotion is warm "parabolic" 1 in 40, parabolic being one of the British equivalents of the German lysol. Between each dressing the gloved hands are washed in soap and water and rubbed with the lotion. Wool dabs are used in the lotion, gloved hands rinsed in it, and instruments kept in it. The whole process is simple and expeditious. Bare hands get infected and infect clean cases. Fresh rubber gloves for each case are unnecessarily time-consuming and costly. To use sterilised gauze for mops in these infected cases is unnecessary.

The prolonged hot iodine bath for limbs is very useful; three or four hours at a time alternating with the fomentations. Whilst in the bath the patients are encouraged in the use of muscles and joints.

I am accustomed to say in speaking of limb injuries "Do not think of the wound, think of the limb below it. Endeavour to minimise the crop of cripples which this war will bring forth." Everything possible must be done to prevent stiff joints, atrophied, paralysed, glued-together muscles, lengthened tendons, loss of grasp, dropped hands, and dropped feet. Later we shall have war hospitals which by electricity, by massage, by hot-air baths, and by mechanical and surgical methods are endeavouring to cure what might have been in many instances prevented by carrying on side by side with the wound treatment, treatment calculated to restore the usefulness of the limb.

The patients must be stood over at the time of their dressings and carefully and methodically put through different movements and exercises. With the arm, for example, the patient is told to use every endeavour to make this or that movement, to make finger meet thumb, to flex and extend the wrist, to pronate and supinate, to grasp, to separate and close together the fingers. It is explained to the patient that all this painful exertion is for his own good, and to give him a useful limb later.

[1] Prepared according to Mr. Rushton Parker's formula by Messrs. Sumner and Co., Liverpool. (See Brit. Med. Jour., Oct. 31st, 1914.)

Splints should be designed to keep a limb in its most useful position and to prevent tendons lengthening. In wrist drop, for example, arm splints are prolonged by a piece attached at an angle which dorsiflexes the palm, leaving the fingers free. The arm extension splints of Borchgrewink, for my knowledge of which I am indebted to Mr. E. W. Hey Groves, of Bristol, are occasionally useful, but it is difficult to apply the extension strapping in the presence of a septic wound. The humerus splint is shown in Fig. 1.

FIG. 1.

Extension splint applied in compound shell fracture of humerus.

Shell fragments require removal when infection in the wound has practically ceased, or if it is obviously the fragment which is keeping up the infection. They will not usually remain in permanently, wounds which have apparently healed breaking down again. Not infrequently a bit of clothing comes out with the fragment. Although the nearness to the skin of the missile in deep injuries may sometimes be due to its "working its way out," yet I think there is a condition which may be called "shrapnel recoil," the missile hitting bone and then springing back. In an officer hit by a fragment of shell, which went through the temporal muscle and completely fractured the temporal bone, the X ray and operation showed the fragment close under the skin near the entrance wound.

Head wounds should not be left alone in the same way as others, as South African experience taught; they should, except in obviously trivial superficial injuries, be explored, as there may be deep damage to bone or brain, although no definite immediate symptoms are present.

The rule at this hospital is that every infected gunshot wound of less than ten days' duration which has not yet had a prophylactic injection of tetanus antitoxin shall have one. So far there has been no case of tetanus, but I heard that the British army had passed out of the "tetanic belt"—i.e., the richly manured soil area—before this hospital began to receive patients. The bacteriological investigation of all septic wounds admitted has been carried out by my colleague, Lieutenant B. G. Klein, R.A.M.C. All the shell wounds have been infected, many of them badly, and having a very foul odour. The predominant organism is a streptococcus, mixed often with anaerobic bacilli. Stock serum and autogenous vaccines have been used with apparent benefit in some cases.

X rays are used in all cases, even where entrance and exit wounds show that the projectile has passed through, for shell fragments or foreign bodies carried in may be left behind or there may be unsuspected bone damage. An officer who showed shrapnel entrance and exit wounds subsequently had removed from his leg a portion of the buckle of a leather gaiter. The cross-thread localising apparatus is too tedious and tiresome for ordinary use; I wonder to what extent it is used in the war hospitals that have provided themselves with it. Localisation is usually adequately obtained by photographs in two planes. The telephone probe forceps as modified by me has proved occasionally useful.[2]

A detailed clinical history ascertained by a series of routine questions is of value in revealing unsuspected details and for collective investigation of cases. The length of the missile track is measured by a pair of obstetric callipers. Without careful investigation a third wound, and so a lodged missile, may be missed. A man had entrance and exit wounds on the inner side of the right thigh; he said that he had been told in another hospital that there was no bullet in him. There was tenderness in the right side of the scrotum and a tiny wound at its posterior part; a deformed bullet was extracted anteriorly under local anæsthesia. Convenient terms for different wounds are: "gutter wound," "subcutaneous channel wound," "traversing wound," "double traversing wound," and "lodging wound." A rough drawing, or the marking of wounds on a clinical diagram, adds much to the value of the description of a case.

Arm wounds are common. The men are hit in the trenches, where only the arms and head are exposed. The head wounds are often fatal; hence the frequency of arm wounds. Compound comminuted fractures of the humerus are frequent. Leg wounds are often inflicted when running; they are occasionally across both thighs, and may involve the scrotum; the sciatic nerve is sometimes bruised, producing dropped foot or sciatic neuritis. All the many complications of severe head injuries are observed. Superficial wounds of the head may produce unconsciousness lasting for several hours. Temporary loss of speech and hearing lasting several days may follow a shell explosion near the patient.

With penetrating chest wounds pyopneumothorax occurs. No penetrating abdominal wounds by shell have so far reached this hospital; such injuries are probably usually fatal.

Typical skiagrams are appended. They were taken in the X ray department by Lieutenant Klein.

The following case of traumatic aneurysm is of special interest.

Shell wound of calf; fragment in medullary cavity of tibia; traumatic aneurysm.—The patient, a sapper (R.E.), was wounded on Oct. 18th by a shell bursting near him. His own field dressing was applied within five minutes. He was admitted to the Welsh Hospital on Nov. 8th, three weeks

[2] Journal of the Royal Army Medical Corps, April, 1905.

FIG. 2.

Compound fracture of left humerus. Septic. Large shell fragment removed. Bone union and wound healed.

FIG. 3.

Compound fracture of left humerus. Septic. Shell and bone fragments seen. (Still under treatment.)

FIG. 4.

Compound fracture of left humerus. Longitudinal passage of missile. Septic. Shell and bone fragments clearly to be seen. (Still under treatment.)

FIG. 5.

Compound fracture of right radius and ulna. Septic. Stated to be by bullet at 100 yards. Much comminution. (Still under treatment.)

FIG. 6.

Compound fracture of proximal phalanx of left middle finger and adjacent metacarpal. Septic. Accidentally self-inflicted by bullet when hand over muzzle. (Will lose finger.)

FIG. 7.

Compound fracture of left tibia. Septic. Shell fragments removed after bone had united.

after his injury. In the upper part of the right calf was a large pulsating swelling with thrill and bruit; there was no pulse in the posterior tibial at the ankle; the foot was somewhat cold and pale. Antero-posterior and lateral skiagrams showed shell fragments apparently in the medullary cavity of the tibia. Scar of entry wound seen.

Operation was proceeded with on Nov. 13th (tourniquet). The aneurysm was laid open by a long vertical incision through the calf muscles. It was found that both the posterior tibial artery and vein were wounded; a number of branches and tributaries had to be tied which occur in this situation. A long length of the posterior tibial nerve was held on one side to safeguard it. A hole in the tibia was enlarged and the shell fragments found free in the medulla 1½ inches below point of bone entrance. The wound was closed with drainage and it healed aseptically, the man leaving the hospital on sick furlough on Dec. 14th, recovered except for slight weakness of leg.

I am indebted to my colleagues, Lieutenants F. Armstrong, J. S. Rowlands, and T. Garfield Evans for their careful observation of cases which has helped in the preparation of this paper.

Netley.

X RAYS IN WAR TIME.

BY EDWARD W. H. SHENTON, M.R.C.S. ENG., L.R.C.P. LOND.,
SENIOR RADIOGRAPHER, GUY'S HOSPITAL.

A RECENT article by an eminent surgeon on X ray examination in bullet wound cases suggests that many who are now tending the wounded are unacquainted with the existence of modern X ray possibilities. A brief description of a system which I published 16 years ago and have used ever since may therefore be of service.

I must at the outset make some dogmatic statements which I am well aware will not meet with universal approval. I hope, however, that the fact that they are the outcome of opinions formed during ceaseless X ray work since the year 1896 will allow them to have some weight.

X ray photographs should not be used for the localisation of foreign bodies except in very special cases. I make this statement having seen more unsuccessful operations from this cause than any other. I do not wish to elaborate this point further. In the next place I would say that there is no difficulty with ordinary good modern apparatus in seeing an embedded metallic fragment in any part of the human body fluoroscopically—that is, on the screen. The only exceptions to this rule are very small foreign bodies in the eyeball.

If the bullet—I use the bullet as an object for the sake of convenience—is in a portion of the body that can be turned in all directions, we can at once, by screen examination, form a mental estimate of its position. It must be apparent to everybody that if two views at right angles to one another are obtained, we get, as it were, plan and elevation. As in the majority of cases it is possible to move the part examined—that is, to move it in relation to the X ray tube—this should be the first examination made by the radiographer.

I do not intend to go into the complex subject of apparatus, and will merely deal with general principles.

First, the tube should be below and the screen above the patient. The tube should be enclosed in an X ray proof box, a metallic diaphragm reducing the unnecessary X rays. By suitable means, which common sense will dictate, the rays emanating from the tube must be so adjusted that the axis of the beam is vertical in relation to the patient's body. Diaphragms of different diameter—for example, holes cut in thick sheet lead—are required for modifying the size of this beam.

Let us now take a simple example of an embedded bullet—a bullet in relation to the lower end of the femur. We adjust our beam of light as the patient lies upon his back, so that the bullet appears in the centre of the resulting small disc of illumination on the screen. Beneath the screen, and touching the skin, a metal pointer is pushed until its tip meets the bullet (I should more correctly say until its shadow meets the shadow of the bullet upon the screen). This point is marked upon the skin, and so long as the laws of nature hold good the bullet must be vertically under this mark. The radiographer can do no more in a case of this kind than indicate the spot under which the bullet is lying and give a depth at which it lies. He may, of course, do this from various aspects, but practically speaking this is all he can do, and all he should be expected to do. All systems of localisation are eventually reduced to this, though some admittedly take a long time before they definitely disclose their purpose. A spot having been marked upon the skin beneath which the bullet is lying, it is now required to find the depth. The patient is turned upon his side (in the case, e.g., of the left knee, on the left side; of the right, on the right). The screen and bull's-eye of light are again adjusted, and at this stage it must be apparent to the observer whether the bullet lies in front, behind, or inside the bone. With regard to the last-named position, if when viewed antero-posteriorly the bullet lies within the shadow of the bone, and when viewed laterally it is again seen within this shadow, the bullet must be in the bone. At this stage a piece of leaden fuse wire should be rolled round the metal pointer (for which latter a knitting-needle will do excellently), so that when held under the screen it is possible to indicate a given length by sliding the lead wire backwards and forwards. Although I have specially made appliances for this work, I purposely describe how it may be accomplished with the very simplest tools. The pointer is now placed on the ink-mark, and is held in a horizontal position. The lead-wire stop is slid along the pointer until the distance of the stop from the point is equal to the distance of the bullet from the point, as measured on the screen. As bullet and pointer are now on the same plane in relation to the screen and tube, it must follow that the distance marked off on the pointer is the exact distance of the bullet from the tip of the pointer—that is, the exact distance under the ink-mark upon the skin. No surgeon wants to work in millimetres in cases of this type, but this distance can be measured to any degree of accuracy. While the pointer is in position, I should like to call attention to an interesting fact which will be of value later. The tube is moved to and fro, a considerably larger diaphragm being substituted for the small one previously worked with. The shadows of pointer and bullet are seen to make wide excursions across the screen, but they will always maintain the same distance on the screen, and this can be verified by measurement. Now move the pointer nearer the screen and again take measurements. It is seen that these two objects no longer keep the same distance apart, but vary considerably; in other words, the shadow of the bullet makes a much longer excursion than the shadow of the pointer.

To take an extreme case, let the pointer touch the screen; when the tube is moved the pointer will remain still while the bullet travels. This fact should be kept in mind.

Let us take a different class of case, the case where the part examined cannot be turned. This may result from various causes unnecessary to enumerate, but which will occur to the reader. The bullet, as before, is viewed from any available position and the skin is marked. With the screen kept rigidly horizontal, the pointer is manipulated as near the bullet as circumstances will allow, until it is in such a position that the shadow of the pointer and the shadow of the bullet keep an equal distance when the tube is moved from side to side. When this stage is reached the pointer must be on the same plane as the bullet, and the distance of the pointer from the screen is the distance of the bullet from the mark on the skin, assuming that the screen is kept in contact with the skin. Again, I should say that I have a special little instrument for carrying out this work, but a normally dexterous person can attain extreme accuracy after a little practice by merely using simple appliances. The advantages of this system are as follows. First, there is accuracy. Secondly, there is rapidity—a great factor; two or three minutes will give the localisation of any embedded metallic foreign body. Thirdly, this system has been used in the past in tens of thousands of cases, and has proved its infallibility.

I have endeavoured to describe the principle as well as the technique, but am not sure that I have made myself understood. I have already been able to help several of those who are taking up X ray work in connexion with the present war, and if I could be of similar use to others by demonstrating the method in practice it would give me much pleasure to do so.

In the statement above regarding photographic uses of the rays for localisation it should be understood that this refers to localisation pure and simple. Sometimes, over and above measurements, it is desirable to see what the anatomical position of the bullet may be. Also, there may be damage to bones and many other things that make photography desirable, and not least of all is the moral support a radiogram appears to give the surgeon. Any system of localisation that depends upon photography has got, in the first place, to prove its superiority to this satisfactory screen method.

I do not here attempt any discussion of the localisation of foreign bodies in the eye, though this is a subject of much interest.

Harley-street, W.

ROYAL INFIRMARY, DUNDEE.—At a recent meeting of the directors of the Royal Infirmary, Dundee, it was stated that a record number of patients were at present accommodated in the infirmary. Three wards have been set aside for wounded soldiers and fully staffed, the two surgeons, Mr. D. M. Greig and Mr. J. Anderson, had taken a ward each, and Professor MacEwan had volunteered to take the other in addition to the surgical ward which he undertook at the outbreak of war. In all, 64 cases had been received, and the directors had informed the authorities that they were prepared to receive 100 wounded sailors, should that unhappily be necessary. A large number of the staff had left to join the army; but their duties had been willingly undertaken by those who were left. The outdoor maternity cases had much increased, owing probably to so many doctors having left the town. The work of the sanatorium was proceeding as usual. A large number of the adult patients had been discharged cured, one man having been accepted for the army.

A CASE OF SPONTANEOUS RECOVERY FROM DETACHMENT OF THE RETINA.

BY HERBERT L. EASON, M.D., M.S. LOND.,
SENIOR OPHTHALMIC SURGEON, GUY'S HOSPITAL.

IN THE LANCET of Sept. 12th last Mr. Charles Higgens recorded some cases of spontaneous recovery from detachment of the retina. One of these, the first that he mentions, I remember well, as I saw the patient in Guy's Hospital when she was under treatment, and her recovery made a great impression on me. I have lately seen another case, and as such experiences are comparatively rare it may be worth recording.

The patient, an unmarried woman aged 45, consulted Mr. A. V. Moberly, of Surbiton, on July 11th, 1914, for sudden loss of vision in the left eye which had come upon her on the previous day. Mr. Moberly examined the eye with the ophthalmoscope and observed the detachment of the retina, and sent the patient to me for further advice. I saw her on July 15th, five days after the sudden loss of vision. The right eye was highly myopic, but with her glass, $\frac{-11 \text{ D. sph.}}{-1 \text{ D. cyl. vert.}}$, she saw 6/12. In the left eye there was an extensive transparent detachment of the retina, involving considerably more than the lower half of the globe and obscuring the disc and macula. There were no vitreous opacities or other signs of inflammation. Vision in this eye was reduced to bare perception of light. Owing to the patient's circumstances any prolonged treatment by rest in bed, pilocarpine, or mercurial inunctions was impossible, and as I told her that in any case the chances of recovery were extremely remote, she decided to write off the left eye as hopeless and go on with her usual occupation without treatment. About a fortnight later Mr. Moberly wrote that I might like to hear that the patient had come to him to say that the sight in the left eye had returned, and that she could, with the aid of her glass (about − 11 D. sph.), read 6/12 with that eye. I saw her two days later and found that her vision was as Mr. Moberly had stated, and that there was not a trace of the detachment to be seen. The retina was everywhere smoothly replaced and transparent, and the field of vision was complete. The patient said that about ten days after she saw me on the first occasion the sight began to clear on the outer side of the field of vision, and that the whole field gradually became complete. At first she felt as if the eye was half closed, the upper portion of the field of vision being the last to clear.

In a former case of spontaneous recovery from detachment of the retina in both eyes associated with albuminuric retinitis, which I have reported,[1] the area of previous detachment was covered with fine wavy lines of pigment resembling lineæ gravidarum; these the late Mr. Edward Nettleship suggested might be due to the heaping up of retinal pigment in the folds of the retina as the serous exudate was slowly absorbed. In this case there was no such appearance. With the exception of a posterior staphyloma, and the rather thin choroid of high myopia, the interior of the eye was normal in every respect.

I do not know that any satisfactory explanation has been given of the fact that in cases of detachment of the retina vision only remains in abeyance and is restored immediately the retina once more comes in contact with the choroid. The loss of vision can hardly be due to any failure of vascular or lymphatic circulation, as under these circumstances the retina would degenerate rapidly after detachment and recovery after an interval of any length would be impossible. The retina always strips away leaving the layer of pigment epithelium

[1] Transactions of the Ophthalmological Society of the United Kingdom, vol. xxiv., p. 147.

attached to the choroid, and it seems probable that without the pigment epithelium, and possibly the visual purple, the other layers of the retina cannot perceive light. At any rate, for some long period after a detachment the nutrition of the retina remains quite unimpaired and vision is recovered immediately contact with the pigment layer is restored. The extremely defective vision of pronounced albinos suggests that the pigment layer of the retina is essential to vision, and that in detachment of the retina it is the separation of the rods and cones from the pigment epithelium that causes the blindness over the area of the detachment.

Portland-place, W.

AMPUTATIONS IN WAR SURGERY.

BY M. FITZMAURICE-KELLY, M.B., B.S. LOND., F.R.C.S. ENG.,
TEMPORARY LIEUTENANT, ROYAL ARMY MEDICAL CORPS.

THE first maxim of the surgery of the extremities at all times is, I take it, a rigid conservation, and this is far more true in time of war than in the ordinary work of civil practice. With careful treatment many injured limbs, the result of shell wounds (which, had they been caused by a motor omnibus, would have been condemned to summary amputation), make a good recovery, and leave a useful, if imperfect, member. Nevertheless, there remain cases, all too numerous, where the sacrifice of a limb has to be faced as the only safe course, and one is driven to amputate in conditions utterly different from those of any previous experience, in which the routine methods are inapplicable, or, if applied, bring disaster in their train.

The object of the present note is to call attention to a method of amputation first suggested, as far as I know, by me, and now widely practised in the military hospitals of this part of France both by British surgeons and by our French confrères. It has, I think, certain advantages over the methods previously employed, and in many cases saves life or limb; and, further, it seems advisable to communicate the method, and the reasons behind it, to the profession at home, as the resulting stump is to the uninitiated somewhat surprising, and it has reached our ears that some surgeons at home have been startled into uncharitable remarks that a little reflection would perhaps have suppressed.

The chief conditions calling for amputation in the present war have been compound comminuted fractures and gaseous gangrene; the latter one of the most terrible complications in the earlier days of the war, but apparently diminished for the time by the advent of colder weather. In both a virulent infection is present and ordinary amputations are very frequently followed by recrudescence of the infection in the flaps. Further, the mortality following secondary amputations has in the past been high. It is impossible to make even a guess at the figures for the present war, but on the combined statistics of the Spanish-American and Boer Wars Lagarde states it as 42·5 per cent. in the case of the thigh and 21·2 per cent. for the leg. In the present war, where gangrene has been a prominent feature, the figures, at any rate in the earlier days, would probably be higher.

It has long been recognised that in war surgery amputation flaps should be cut rather short, and in the present war the French surgeons soon found that it was better not to stitch them at all, but to pack gauze between the flaps. The method I advocate goes still farther—goes, in fact, right back to the dawn of surgery. It consists in a simple circular division of all the tissues, including the bones, at the same level, and that level the lowest possible. The skin is divided by a circular sweep, the muscles are divided at the level to which the skin retracts, and the bone is then sawn at the same level. The bleeding points are secured and tied, the nerves pulled down and cut short, and a dressing is then applied to the raw surface of the stump.

The operation is, as will be seen, very simple and very rapid in execution, and the results have been surprisingly good. The stump is not painful if care be taken to shorten the nerves, and there is very little shock. Most surprising of all, it can be performed at the margin of gangrenous tissue, without, apparently, any danger of the gangrene spreading to the stump; in one case of massive gangrene reaching the middle of the upper arm amputation was performed half an inch from the gangrenous tissue, and the stump remained healthy. The acuteness of the case may be judged from the fact that the operation was performed within 48 hours of the infliction of the wound. And in cases of compound fracture of the femur, with the wounds in the groin and buttock and the fracture just below the trochanters, I have amputated below the wounds, enucleating the lower fragment and laying open the sinuses on to the surface, with complete success. I am convinced that disarticulation at the hip-joint would in this case have proved fatal—indeed, no surgeon who saw the case would have attempted it.

To sum up, the advantages claimed for the method are: 1. Economy of tissue. The amputation is performed at the lowest level at which a flap could be cut, or even lower, and all recoverable tissue is thus preserved. 2. It is applicable to otherwise hopeless cases, such as wounds or gangrene at the root of the limbs, and in these cases carries a much better prognosis than disarticulation at the hip- or shoulder-joint. 3. It is very rapidly done, and there is very little shock. 4. The surface from which septic absorption can occur is the least possible, and the drainage is free. 5. The nutrition of the stump is unimpaired; in this respect its advantage over a flap amputation is obvious. 6. It is so simple that it is within the range of everyone, and does not need an experienced surgeon for its performance.

It has, I think, other advantages in particular cases. One in particular, that presents itself not infrequently, is the case of multiple wounds. As an example a case in one of the French hospitals in this town may suffice. The patient was wounded by a shell which reduced the foot to pulp and sprinkled the whole limb with splinters to above the level of the knee. In this case it was urgent to remove the foot, and the presence of septic wounds in the leg made it impossible to obtain suitable flaps. The foot was removed by transverse section of all the tissues just above the ankle-joint and the other wounds treated by free drainage. The patient made a good recovery with the loss of the foot only.

The chief disadvantage of the method is that a second operation—a re-amputation—is necessary. But this second operation can be postponed until the infection of the wound has disappeared, and can be undertaken in conditions wholly favourable

as to time and place, and should therefore be without danger. It is, I think, an inconvenience rather than a contra-indication.

In bringing this method before the profession I am permitted to say that Colonel G. H. Makins and Colonel F. F. Burghard, consulting surgeons to the Expeditionary Force, approve of the operation under the conditions occurring in this campaign. And I must further express my indebtedness to Lieutenant-Colonel A. J. Luther, R.A.M.C., officer commanding this hospital, for permission to publish this note on a part of our work.

No. 13 General Hospital, Boulogne Base, British Expeditionary Force.

TWO CASES OF CICATRICIAL STENOSIS OF THE LARYNX.

BY HAROLD BARWELL, M.B. LOND., F.R.C.S. ENG.,
SURGEON FOR, AND LECTURER ON, DISEASES OF THE THROAT AND EAR, ST. GEORGE'S HOSPITAL.

THE treatment of cicatricial stenosis of the larynx is notoriously difficult, although recent improvements in technique have added much to the prospects of successful intervention. More particularly have adaptations of O'Dwyer's tubes to this purpose, the details of which have been elaborated by John Rogers and Bryson Delavan, of New York,[1] contributed to a better result. The older method of fixing in the larynx an upward extension from the tracheotomy cannula was seldom able to produce good permanent dilatation. In a male patient with almost complete syphilitic stenosis I obtained a partial success by means of a T-shaped cannula after thyrotomy, so that the patient, though unable to dispense with a tracheotomy tube, could wear a plug in it and speak with a loud gruff voice when last seen several years after treatment. Intermittent dilatation with Schrötter's bougies is inferior, in my opinion, to intubation, and demands continuous skilled attention over a very long period. Laryngostomy, which consists in splitting the stenosed larynx and trachea and dilating from without, is a severe operation necessitating prolonged after-treatment and a final plastic closure of the wound. Dr. V. Delsaux, of Brussels,[2] reported in 36 cases 14 successes, 6 deaths, and 14 cases still under treatment.

The following are notes of my two cases:—

CASE 1.—A female, aged 22, consulted me in August, 1907. She had suffered from "a cold and laryngitis" since the early part of 1906. In September of that year thyrotomy had been performed and "a piece of growth," reported to be simple hyperplasia of the tissues, removed. In March, 1907, she had a sudden very urgent attack of dyspnœa in the night and tracheotomy was performed in haste. Subsequently, in July, an attempt was made to dilate the laryngeal stricture from below with a Störk's cannula after division with a Whistler's guarded knife. This was, however, unsuccessful, the patient finding it very uncomfortable and being unable to breathe through it. When I saw her in August she was completely aphonic and wearing a tracheotomy tube. The upper aperture of the larynx was normal, the stricture appeared at the level of the ventricular bands, which were adherent as far back as the vocal processes, leaving a triangular gap corresponding to the cartilaginous glottis. There was no sign anywhere of active disease, no appearance suggestive of syphilis, and the original cause of the trouble remained then and afterwards undiagnosed.

After a consultation with Sir Felix Semon I determined on his advice to divide the scar and dilate with Schrötter's bougies. Accordingly, on August 19th I divided the stricture, which was very dense and felt almost like cartilage, under cocaine by the indirect method with a specially made curved probe-pointed bistoury set on a laryngeal handle; a No. 7 Schrötter's bougie (antero-posterior diameter 9/16 inch) was then passed without difficulty. Bougies, gradually increased in size, were passed daily until Nov. 4th, and then three times a week. On Nov. 22nd a small adhesion was found in the anterior commissure and divided, after which a No. 11 bougie (diameter 11/16 inch, the full length of the average female glottis) passed easily, and was used daily for three weeks, twice a week for a further three weeks, and then once a week, the patient being allowed to go home.

On Feb. 11th, 1908, another small adhesion which had formed in the anterior commissure was divided, after which there was no further difficulty, a No. 11 bougie being passed easily at lengthening intervals. Since the beginning of treatment the tracheotomy tube had been kept plugged; it was removed in July, 1908, and the fistula pared and closed. The bougie was passed occasionally up to June, 1909; the glottis was freely open, a very small adhesion being visible in the anterior commissure. The condition remained unchanged when I saw her in February, 1911, three and a half years after the division of the stricture, and it seemed that a permanent cure might be reasonably expected, but within a fortnight she had contracted a severe attack of bronchitis while waiting in a dog-cart on a cold wet day, had become rapidly dyspnœic, and had had to undergo a hasty tracheotomy. When I saw her four months later she could not breathe without her tube, which had been introduced through the divided cricoid cartilage. The site of the original stenosis was widely open, but a dense stricture was visible in the subglottic region, its orifice situated posteriorly, just above the level of the tracheotomy tube. This time, having had the advantage of hearing Dr. Delavan's views at the meeting of the British Medical Association in 1909, I decided to try continuous dilatation with intubation tubes. A low tracheotomy was first performed and the tube removed from the upper wound, but it was not found possible at the time to introduce a fair-sized O'Dwyer's tube; an attempt was therefore made during the next three weeks to dilate with smaller tubes and Schrötter's bougies, and on July 5th the trachea was slit up between the two tracheotomy wounds and, assisted by a silver catheter passed from below, a large vulcanite O'Dwyer's tube was inserted with considerable pressure of the finger upon its head. The tracheotomy wound was kept open as a precaution for four or five days, but was then allowed to close as the tube was retained comfortably. This tube was removed after nine weeks and a larger one introduced for three months, when a still larger tube was inserted, and finally removed 15 weeks later, on March 13th, 1912. An injection of morphine and atropine was given and no spasm occurred. The patient has been seen since at intervals, and although there is a prominence anteriorly in the subglottic region she has no respiratory obstruction, and as it is now two and three-quarter years since the termination of treatment there is good reason to hope that the cure is permanent. She has a loud whisper but remains aphonic.

The tubes were changed whenever any foulness of the breath was complained of, but were never very dirty; the patient lived at home in the country during treatment, only coming to London for a few days when the tube was changed, and the contrast with the tedious dilatation by Schrötter's bougies was very marked. Delavan mentions a case in which the tube remained in unchanged for two years, and others in which intubation extended over four to six years, and remarks that it is better to wear permanently an intubation tube than a tracheotomy cannula; my patient was certainly very comfortable during treatment.

In the above case the tubes were well retained and showed no tendency to be coughed out. Delavan has pointed out that the transverse diameter of the swell must be at least 3/32 inch wider than

[1] Rogers and Delavan: The Treatment of Chronic Laryngeal and Tracheal Stenosis, Transactions of the American Laryngological Association, 1905. Annual Meeting of the British Medical Association, Laryngological Section, Brit. Med. Jour., Oct. 16th, 1909, p. 1144.

[2] Annual meeting of the British Medical Association, Laryngological Section, Brit. Med. Jour., Oct. 16th, 1909, p. 1141.

that of the neck in order to avoid this accident; the smallest tube which I employed had a breadth of 9/32 inch at the neck and 13/32 at the swell, the largest 12/32 and 17/32 respectively. In the following case, however, owing to the small size of the infantile larynx, and to the fact that it was necessary to make the neck of the tube as large as possible in order to dilate the stricture at the level of the glottis, I employed Roger's and Delavan's device of a "clamped" tube.

CASE 2.—A little girl, aged 19 months, was admitted into St. George's Hospital under Mr. F. Jaffrey on Feb. 1st, 1913, in a state of dyspnœa, having drunk that day from the spout of a teapot. Tracheotomy was performed that night, the tube was removed on Feb. 12th, and she went home on March 1st. She was readmitted on April 5th, having had inspiratory stridor for a fortnight. Tracheotomy was performed through the old scar four days later, and was followed by an attack of broncho-pneumonia. On June 21st I examined under anæsthesia with the direct laryngoscope and found a very tight stricture at the level of the glottis which I dilated with gum-elastic urethral catheters. I dilated again on July 2nd up to No. 12 English size, and had two specially small O'Dwyer's tubes made which I passed on July 16th, leaving in the larger above the tracheotomy tube, but it was quickly coughed out. A fortnight later I succeeded in introducing several larger tubes, including one of vulcanite made extra long and of the same diameter all the way down from the head except for a slight taper at its extremity, and its lower end cut obliquely to facilitate introduction. I marked this tube with a heated bradawl through the tracheotomy fistula, had a groove cut at this level, and fixed it on the following day with the clamp passed through the fistula. This clamp (see figure) is of white

Tube and clamp used in Case 2.

metal, made in two pieces for introduction separately like an obstetric forceps, and has a plug screwed over the shank to fix it and at the same time to keep open the fistula in the neck. The tube gave very little trouble and the little patient was sent home. She was re-admitted and extubated two and a half months later on Oct. 15th; she had several attacks of coughing and slight dyspnœa, but was comfortable by the 18th. I saw her last on Nov. 23rd, 1914; there was no dyspnœa nor noisy respiration either during sleep or on exertion, the voice is usually a natural childish treble, but occasionally "breaks" into a gruff tone.

This ingenious "clamped" tube has the double advantage of obviating the risk of spontaneous extubation, which would be quickly fatal in the early stage of treatment, and of keeping open the fistula in the neck so that a tracheotomy cannula may be easily inserted should dyspnœa follow the final removal of the tube.

Queen Anne-street, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON A CASE OF ACUTE TETANUS; RECOVERY.

BY F. J. FARRELL, M.B.,
AND
G. G. MECREDY, M.B. DUB., D.P.H.

THE short incubation period and acute onset, the delay before treatment was commenced, and the eventual recovery are points that make the following case one of interest.

A man, aged 28 years, while leading a restive horse on Oct. 10th, 1914, sustained a small abrasion on the left hip. The wound appeared trivial, and he took no notice of it. Two days afterwards (the 12th) he complained of a stiffness of the left masseter muscle, but did not consult a medical man until Oct. 16th. At this time he was suffering from noticeable stiffness of both jaws, and was not able to open his mouth widely. He did not mention that he had sustained a wound, and a diagnosis of tetanus was not made until the following day. 3000 units of antitetanic serum were given subcutaneously, and he was removed to the local hospital. The wound was swabbed with liq. iodi fort. On admission the temperature was 97·4° F. and the pulse 130. The head was retracted and the tendon reflexes were greatly exaggerated. Treatment during the following four days consisted in subcutaneous and intramuscular injections of antitetanic serum. 15,000 units were given in this manner. Continuous saline solution was given per rectum. Large doses of chloral and potassium bromide were administered by the mouth every three hours. The convulsions were controlled by chloroform inhalations. On Oct. 22nd the patient's condition had become worse; he was slightly delirious and had several violent spasms of the muscles of the back producing marked opisthotonos. By lumbar puncture 10 drachms of cerebro-spinal fluid were removed and 4500 units of antitetanic serum were injected into the spinal canal; at the same time 6000 units were given intravenously and 1500 subcutaneously. Eight hours later the temperature had risen to 103·4°, and the patient became wildly delirious. The serum treatment was continued subcutaneously, and with the exception of the delirium, which lasted for ten days, the patient improved rapidly and made an uninterrupted recovery.

Bagenalstown.

NOTE ON A CASE OF THROMBOSIS OF THE PORTAL VEIN AND TRIBUTARIES, WITH GANGRENE OF THE SMALL INTESTINE.

BY LEONARD H. TAYLOR, M.B., B.S. LOND.,
MEDICAL OFFICER TO THE KELANTAN GOVERNMENT, PROTECTED MALAY STATES.

A Sikh policeman, 30 years of age, was admitted to the State hospital after five days' illness complaining of "attacks of colic, fever, and slight cough." The patient was a strong, well-built, and well-covered man. On examination there were no physical signs in the chest and the abdomen moved well but was tender on palpation. The temperature on admission was 100° F. He stated

that he was generally constipated, which proved to be the case while he was in hospital. On July 24th and 26th he had slight attacks of colic, and on the 27th he passed one large worm (ascaris lumbricoides). It was then thought that "worms," a very common complaint, might be the cause of his trouble, and he was treated accordingly. No more worms were passed, however, and the general abdominal pain was not controlled except by morphia. From the 28th onwards very little food was retained, but there were no other signs of obstruction. The bowels were opened every other day with the help of drugs; the fæces were normal and there was no blood. Examination under the microscope discovered no ova. On August 3rd he vomited a little dark blood, and the next evening he died. Under post-mortem examination the following condition was made apparent. On opening the abdomen purple coils of small intestine presented, and this early gangrene extended from the cæcum upwards for 9 feet of gut. About one pint of blood-stained serum was sponged out of the peritoneal cavity. The liver was pale but otherwise normal, as were the other organs. After carefully removing the intestines the veins were examined and the portal, superior mesenteric, and pancreatic veins were seen to be full of dark blood-clot, the thrombus extending up to the liver. The gangrenous part of the opened gut contained bright blood and in the cæcum there were three stercoliths. Others were also present in the large intestine. There were no worms.

It would seem that the stercoliths set up an inflammation of the cæcum and appendix, and from these foci the infection reached the blood stream. The "spurious diarrhœa" is a point of interest.

Kota Bharu, Kelantan.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF DERMATOLOGY.

Exhibition of Cases.

A MEETING of this section was held on Dec. 17th, 1914, Dr. J. H. STOWERS, Vice-President, being in the chair. The following cases were shown:—

Dr. W. KNOWSLEY SIBLEY showed a young woman who suffered from attacks of Intense Cyanosis and Sweating of the Hands during the winter. He considered the case one of Angiokeratoma.—Dr. ARTHUR WHITFIELD, Dr. H. G. ADAMSON, and Dr. STOWERS were inclined to consider the case one of Crocker's "winter eruption" with dysidrosis.

Dr. SIBLEY also showed a girl with Red Patches on the Hands which recurred in the winter.—Most of the members present considered the case one of lupus erythematosus.

Dr. H. MACCORMAC showed a woman, aged 64, with Chronic Inflammatory Lesions of the Hands, Feet, Knees, and Elbows, which he considered to be of toxic origin.—Dr. ADAMSON, Dr. E. GRAHAM LITTLE, Dr. A. D. HEATH, and Dr. A. M. H. GRAY agreed that the case probably belonged to the group of persistent exudative erythemata, of which some examples had previously been shown.

Dr. LITTLE showed a case of Multiple Rodent Ulcers.—Dr. ADAMSON, Dr. WHITFIELD, Dr. S. E. DORE, and Mr. J. E. R. MCDONAGH discussed the relationship of these cases to multiple benign epithelioma.

Dr. LITTLE also showed two cases of Arrested Hair Growth, one case being congenital and the other coming on after an attack of "eczema" of the scalp at the age of 15.—Dr. G. PERNET discussed the question of deficiency of secretion of the ductless glands in these cases.

Dr. DUDLEY CORBETT showed a man, aged 23, with numerous Small Raised Tumours scattered over the body; he also demonstrated sections of the tumours. The question arose as to whether these tumours were of epithelial or granulomatous nature.—Dr. WHITFIELD was unfamiliar with the condition, and did not consider that the case corresponded with any described disease.—Dr. ADAMSON thought the case one of xanthoma diabeticorum of unusual type, with which view Dr. LITTLE and Dr. PERNET agreed.—Mr. MCDONAGH said that the case reminded him of lichen nitidus.—The case was referred to the Pathological Committee.

Dr. DORE showed a patient with a Patchy Eruption on the Trunk of yellowish colour and of short duration associated with similar more chronic lesions on the shins. He thought that the diagnosis rested between pityriasis rosea and xantho-erythrodermia perstans.—Dr. PERNET, Dr. LITTLE, and Dr. STOWERS favoured the former view.

Dr. DORE also showed a case of Alopecia Areata of the Scalp associated with a similar condition of the eyelids, and an unusual case of Lichenification in which the pre-existence of a lichen planus was in question.

Dr. PHINEAS S. ABRAHAM showed a case of Lupus Erythematosis exceptionally developed on the fingers.—Dr. DORE agreed with the diagnosis, but remarked on the resemblance to lichen planus.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held in the Metropolitan Hospital on Dec. 18th, 1914, Dr. David Ross, a past President, being in the chair.—Dr. W. Langdon Brown conducted a clinical afternoon and showed: 1. Skiagrams demonstrating a case of Appendix Dyspepsia. The first plate showed the bismuth meal four hours after administration in the cæcum; the second, eight hours after administration in the cæcum and transverse colon; and the third, 20 hours after administration in the cæcum and rectum, the transverse colon being empty, the residue in the cæcum showing stasis in the affected region. 2. A girl who was sent to hospital on account of frequent attacks of blood in the urine, preceded by dead fingers. The condition was described as paroxysmal hæmoglobinuria, no red corpuscles being found. The causes of this condition were stated to be two—syphilis and Raynaud's disease. The Wassermann reaction was positive; potassium iodide and mercurial inunction were being used. 3. A girl, aged 7 years, who had been in hospital in 1911 and 1913 and again in November, 1914, who suffered from vomiting every five or six days followed by acetone in the urine. Cyclical vomiting of children due to B. coli was diagnosed and the indican reaction demonstrated. This consisted of mixing equal parts of urine and hydrochloric acid, adding a few drops of hydrogen peroxide and shaking up with chloroform when a blue colour appeared. 4. A boy, aged 10 years, who had had rheumatic fever, which left him with double aortic and mitral murmurs, and who suddenly developed hemiplegia with aphasia. The streptococcus salivarius was found, and the case was treated with sensitised vaccines. Later pain was complained of in the left side. The spleen was found to be enlarged, due to infarcts. Infective endocarditis was diagnosed. 5. A girl, aged 15 years, with rheumatic fever with raised and tender purpuric spots due to embolic plugs. She had a double mitral murmur. Long-chain streptococci were found and a vaccine prepared from her own blood, after each dose of which a reaction took place. There was no hæmaturia. Later the patient developed pain in the side, and the spleen was found to be enlarged. 6. A man, aged 39 years, a free bleeder on the slightest provocation, complained of pain across the back. The glands in the neck and the groins were swollen. The leucocyte count was 88,000, 99 per cent. lymphocytes. Acute splenic leukæmia was diagnosed. Arsenic and benzol in half-gramme doses, increasing, was being used. 7. A man aged 38 years. He was anæmic on May 9th, 1914, and had epistaxis; later mouth bleeding with pale gums; and still later hæmaturia. Blood count 2,000,000 red, 4000 white. No abnormal cells. In July half a million red cells. Treatment, transfusion 25 c.c. human blood. Red corpuscles reduced. Transfusion repeated. On Nov. 19th red corpuscles numbered 1,320,000. He was still anæmic, but felt better. White corpuscles 5000.—Dr. P. Hamill showed: 1. A woman who was exhibited to the society in May, 1914, suffering from Gumma of the Soft Palate. The patient had had two doses of salvarsan in addition to potassium iodide and mercury, and was much improved, only a small perforation remaining. 2. A woman, aged 44, who weighed 16 st. in October, with a blood pressure of 180 on the right side. Small left pulse, pressure 140. Fusiform dilatation of aorta. No interstitial nephritis. Her weight was reduced by careful dieting at the rate of 6 lb. per month to 15 st.

Reviews and Notices of Books.

Chemical Pathology, being a Discussion of General Pathology from the Standpoint of the Chemical Processes Involved.

By H. GIDEON WELLS, Ph.D., M.D., Professor of Pathology in the University of Chicago. Second edition, thoroughly revised. London and Philadelphia: W. B. Saunders Company. 1914. Pp. 616. Price 15*s.* net.

THE first edition of this work was reviewed in THE LANCET of August 17th, 1907. It is perhaps not too much to say that owing to the rapid advances in the comparatively new science of biochemistry the literature of chemical pathology has received more substantial contributions during these few years than in all the previous history of this branch of biological and medical science. The work of Emil Fischer and Kossel and other chemists on the intimate nature and constitution of proteins and carbohydrates has exercised an enormous influence, as well as stimulated active investigations in many directions, from which have come large additions to our knowledge, more especially in regard to immunity. The fascinating possibilities of the chemical problems associated with the ductless glands suggest the solution on chemical lines of the treatment in some of the most obscure problems of perverted metabolism. No student who would remain abreast of recent progress in biochemistry can afford to neglect the most important advances which have been made in what is practically a new field of observation—viz., that of "colloid chemistry." We are glad to notice that the author besides referring to the large compilations of Abderhalden and Oppenheimer makes graceful reference to the important series of "Monographs on Biochemistry," edited by Plimmer and Hopkins.

The chemistry and physics of the cell are first dealt with, because the chemistry of disease must refer back to the chemistry and physics of the normal cell. This consideration leads the author to discuss the enormous number of chemical reactions of varied nature which at one and the same time are going on in any individual cell, such as a hepatic cell; and as enzymes are present in every living cell without exception, they are dealt with in a manner that presents to the reader the latest investigations in this department, including the question of autolysis in relation to metabolism and pathological processes, and the defence of the cells against their autolytic enzymes. The chemistry of bacteria and their products and of animal parasites, including the story so far as is known of phytotoxins and zootoxins, is next set forth in a most readable and attractive manner. More especially would we direct attention to the careful, lucid, and comprehensive survey of the chemistry of the "immunity reactions" under such subdivisions as antigens, specificity, antitoxins, agglutinins, precipitins, anaphylaxis or allergy, opsonins, serum bacteriolysis, cytotoxins, and the now extensive and important domain of hæmolysis, complement fixation, and the clinically important Wassermann reaction. Inflammation and the disturbances of circulation and diseases of the blood are presented in the light of most recent research. "Edema" next claims attention. Retrogressive changes, including necrosis, and the various infiltrations and degenerations, carry the author on to the subjects of calcification, concretions, pathological pigmentation, and the chemistry of tumours. The consideration of the vast, but as yet comparatively unexplained, pathological conditions due to, or associated with, abnormalities in metabolism, including auto-intoxication, leads the reader to chemical pathology of the ductless gland, uric-acid metabolism and gout, and finally to a concise account of diabetes by Dr. Rollin T. Woodyatt. As to gout, von Noorden, with all his vast experience, finds that it is not very alluring to write anything regarding the theoretical side of the question. "All theories advanced up to the present time have fared badly. The positive material is much too insufficient and much too ambiguous."

Our knowledge of "chemical pathology," even in well-known and long-established and well-recognised forms of disease, would seem to be in an embryonic phase. Much of the successful treatment of certain forms of disease must inevitably be revealed through the investigations of the new biochemists. We have no hesitation in stating that this comprehensive and suggestive work should be read not only by every pathologist but also by every physiologist. That pathology is but a variation of physiology and that the essential mechanisms are identical is generally accepted, but the evidence in favour of this knowledge has not been better marshalled. We tender to the author our grateful thanks for his illuminating contribution to one of the latest developments of biochemistry—viz., that all-important branch which he calls "chemical pathology."

Atlas und Lehrbuch wichtiger tierischer Parasiten und ihrer Überträger, mit besonderer Berücksichtigung der Tropenpathologie.

Von Dr. med. et phil. R. O. NEUMANN, o.ö. Professor der Hygiene und Direktor des Hygienischen Instituts der Universität. Bonn; und Dr. med. MARTIN MAYER, Abteilungsvorsteher am Institut für Schiffs- und Tropenkrankheiten in Hamburg. München: J. F. Lehmann's Verlag. 1914. Pp. 580, 45 plates, and 237 figures in the text. Price 40 marks.

THIS work is a recent member of the important series of medical atlases published by the well-known Munich firm. Though issued in one volume and in quarto form it resembles in character the older atlas of bacteriology by Lehmann and Neumann, and like that work consists of two parts—a text-book and a series of plates. The text is not a mere description of the plates, but a manual of the subject treated, complete in itself, and illustrated with numerous and excellent illustrations in black and white printed in the text, as well as by admirably reproduced photographs of various flies and ticks on separate plates. The atlas, constituting the second part of the book, consists of 45 plates produced in chromo-lithography, each plate containing numerous illustrations.

The book is the result of many years' work, and use is made of the material collected by the Institute of Maritime and Tropical Disease. It is intended to serve as a text-book and a work of reference as well as to assist in illustrating practical courses in the subject with which it deals. It is refreshing to find so large a number of references to the work of English observers, but in tropical medicine at any rate the investigations and researches of English medical men have been of a capital importance which has to be recognised. Perhaps the most characteristic feature of the work is that it deals not only with most of the important animal parasites but also with their carriers and intermediate

hosts. Without this correlated study a proper comprehension of the clinical and epidemiological features of the diseases caused by the parasites and the methods by which they may be prevented or combated is altogether impossible. The organisms and their hosts or carriers are dealt with together, and the means of capturing, breeding, keeping, and transporting them are fully described, as well as the methods by which they are best dissected and prepared for examination.

The work commences naturally with the parasitic protozoa, and then passes under review the more highly organised parasites, the worms, the parasitic larvæ of flies, and fleas and lice. The chapter on the malarial parasites, which is illustrated very fully, is preceded by a short account of the methods of blood examination which are of service for the special purpose of demonstrating the parasites, but attention is also drawn to the cellular changes which occur in the disease. The spirochætæ are regarded as definitely belonging to the groups of animal parasites, and to this group are referred the organisms of relapsing and African tick fever, as well as those of syphilis and yaws. Useful tables are scattered throughout the book, in which summaries of our knowledge of the parasites and their hosts are given; those dealing with the various trypanosomes of the larger and smaller mammals, the blood spirochætæ, the filariæ, and other parasites may be mentioned.

The number and character of the plates constituting the atlas portion of the book have already been spoken of. The majority of the illustrations are accurate and instructive and form a very complete series. The plate of blood cells would perhaps have been of greater use to English students had some stain other than Giemsa been employed for their demonstration. There are a few slips in the descriptions of the objects represented. The book is characterised by German thoroughness, and evidently much labour has been spent upon it and no pains or expense have been spared in its production. It is a work which will certainly be of use in every pathological laboratory.

A Treatise on Clinical Medicine.

By W. H. THOMSON, M.D., LL.D., Physician to the Roosevelt Hospital, New York. London and Philadelphia: W. B. Saunders Company. 1914. Pp. 667. Price 21*s.* net.

IN this large and handsome volume Dr. Thomson has mainly kept in view those subjects which concern the physician when he deals with the sick. Accordingly it occupies itself for the most part with the treatment of disease, and with its symptomatology and pathology so far as they contribute to the formation of the diagnosis upon which treatment must be based. It is of particular interest, because it offers a reflex of the author's own habits and methods in clinical medicine; it is in no way a dictionary or compilation, but gives evidence throughout of the personal touch, and it is clearly founded on individual experience and observations at the bedside.

Dr. Thomson begins with a chapter on the mechanism of surface chill or "catching cold," a process on which he lays the greatest stress. He says that outside hot and moist climates, "catching cold" is the most common cause of disease and death. He attributes this to localised temporary arterial spasm—that is, the reflex result of chill to some part of the body surface, a local and not a general cooling of the bodily, and clearly believes it to be of the greatest importance in the occurrence of all kinds of disorders. Next follow chapters on certain important symptoms and on remedies, and then 160 pages on the various infectious disorders. The last 400 pages of the text deal with diseases of special tissues or organs, and the book ends with an adequate index.

A great deal of sound and excellent advice to the medical practitioner is conveyed in this volume; the pages on Graves's disease, on infections by the bacillus coli, and on typhoid fever may be particularly mentioned in this respect. When he ventures into the field of scientific explanation the author is not always so happy. It is possible, for instance, that some of his readers will not be able to follow his division of cases of infantile paralysis into the epidemic form due to infection and the sporadic form due to spasm of branches of the anterior spinal artery caused by "catching cold." The book is clearly written and is practical in its outlook; it may be recommended to medical men who want a general text-book of treatment.

On the Graduated Character of Mental Defect and on the Need for Standardizing Judgments as to the Grade of Social Inefficiency which shall Involve Segregation.

By KARL PEARSON, F.R.S. London: Dulau and Co. Pp. 51. Price 2*s.* net.

THIS lecture, delivered at the Galton laboratory in February, 1913, is published as one of a series of papers on Mendelism and the Problem of Mental Defect. We are told by the author that he takes the subject of feeble-mindedness, the treatment of mentally defective children, as an illustration of his initial pronouncement that a new scientific Renaissance has taken place, and that new standards of logic and accuracy will thus cause much scientific and medical work which may be done in the future on the old lines to be looked upon only as dogma or quackery. Confessing much boldness in drawing the illustration of his thesis from the subject of this paper without any direct experience of the mentally defective, either as a medical observer or as a teacher in special schools, he essays to justify himself by stating his conviction of the need for some "censores scientiarum" or "watch-dogs of science" to warn the public against ignorance that parades as knowledge. He also proposes as an effective parallel to the proper treatment of those who have hitherto dealt with the subject of the feeble-minded, the method of the *Epistolæ obscurorum virorum* which overthrew mediæval scholasticism.

It is not intended, nor indeed would it be very relevant, to discuss in this notice either the author's postulate of a new scientific Renaissance or the success of his assumption of the rôle of Ulrich von Hutten in killing his opponents with ridicule and sarcasm, but rather to comment *passim* on some of his statements and implications which, in relation to the matter in hand, are erroneous and misleading. We willingly concede to him at once that there is, on the subject of the nature and etiology of "feeble-mindedness," a very great amount of ignorance, much of which "parades as knowledge." But we hold also that much of this ignorance is fully recognised as such, even by many "scientists" and medical men who may not acknowledge the existence of a new Renaissance.

Professor Pearson, to judge from the leading title and the concluding sentences of his essay, professes to deal with the problem of feeble-mindedness in close connexion with Mendelism and the theory of "unit segregation" in the germ plasm, and strongly suggests to the reader, by the form of his general argument, that he is contraposing his own view that what he calls *mental defect* is but an extreme variation of normal mentality, exclusively to the Mendelian view that the mentally defective form a differentiated species. He refers, on p. 8 of his paper, to "two fundamentally divergent schools" which are marked by this contraposition of view; and we may, perhaps, correctly infer that these two schools are those that are known as the Biometrical and the Mendelian respectively. But, in the process of treating the questions of the definition and detection of mental defect and of legislative control of the mentally defective, he tacitly assumes that all the scientifically ignorant persons with whom he is dealing are Mendelians and therefore believe that mentally defectives are a differentiated species owing to the absence of a unit-character in the germ-plasm. He states, indeed, dogmatically, that "this theory of a differentiated class has taken root and is leading to complete distortion of the perspective in regard to the mentally defective," and infers that the new Commissioners are thus inevitably faced with the attempt to solve the whole problem of the nature and origin of mental defect. "Surely," he asks, after giving this misleading representation of the real case on the other side —"surely without adequate knowledge as to the nature, the definition, the treatment and the source of feeble-mindedness, could the State ever have legislated? ..... If we are going to segregate the mentally defective for life we must, of course, have clear ideas of how it is differentiated physically and psychically from the normal child. ..... This problem must press heavily on our new Commissioners, and it will be intensely interesting to see what they will make of it."

Now in so far as Professor Pearson has attacked only Mendelian doctrines in relation to these questions we grant him full success. But his victory seems quite otiose. Mendelism has really nothing to do with the practical side of the question that he is raising, and seems rather to have been dragged into this paper, which is directed mainly against "scientists and scientific men" other than Biometricians, somewhat as a cock-shy. As a matter of fact, the notion of a rigid line existing between the feeble-minded and the normal does not underlie existing legislation, nor does it affect practical action. It has never been proposed to segregate anyone "for life" under either the new or the old Act, or to segregate anyone at all on the ground of any mental defect which should or could be rigidly defined. Still less has the question of segregation been based on any theory, biological or other, of "nature," "causation," or "heredity." Persons are placed under care and control when they can be shown by their conduct to be incapable of protecting themselves or of abstaining from doing harm to others; and in all cases the inference of "insanity" or "mental defect" is essentially based, as Dr. Mercier has so persistently made clear, on observation of *conduct* in each case. This is quite evident in the so-called and miscalled "definitions" in the Mental Deficiency Act, which are really general *descriptions* of the groups of persons who need care and control. Unless Professor Pearson contends that without an accurate knowledge of the source, nature, definition, and treatment of insanity, all legislation has been and is absurd, his general strictures on the fatuousness of those who would control such mentally defective persons as do not come within the four corners of the pre-existing Lunacy Laws are quite irrelevant. He disregards the fact that, in the case of each person whom it is proposed to segregate, the diagnosis is and must be based primarily and mainly on the careful clinical observation of conduct, and on a study, as far as possible, of the history of the case.

The employment by Professor Pearson of the word "mental" with reference only to the "intelligence" in contrast with the general practice of psychologists, who speak of the intelligence as but one expression or "faculty" of "mind," is, perhaps, the most important justification of the description of this pamphlet as misleading. It is quite clear to all those who have any practical experience of the "mentally defective" from the medical or teaching point of view that no mere testing of the intellectual faculties can suffice to decide on the necessity or desirability of interfering with the liberty of any person. The term "mentally defective" includes, of course, reference to what are generally recognised as the *mental faculties*, and is used in this context to denote such persons as give evidence by their conduct of their incapacity to lead a free life without harm to themselves or others; and each case must be carefully studied and dealt with without any necessary reference to problematic questions as to its exact mode of origin. In fact, the terms "mental defect" and "insanity" are used in practice to indicate recognisable characteristics of certain groups of persons without any necessary implication of a definite theory as to the nature and origin of such characteristics. Professor Pearson himself, although urging that those whom he calls (though without defining them) "true mental defectives" form only a small part of the feeble-minded who may need segregation, holds that such mental defectives are but extreme cases of the "normally minded," and proposes to denominate the whole group of those needing segregation as "social inefficients." We have no quarrel with this term; the real reason, as we have said, for segregating "mental defectives" and lunatics is, as a rule, a question of conduct primarily and of their mental state secondarily, and this comes much to the same thing as determining how far they are so "socially inefficient" as to need care and control. But we do not think that the term "social inefficiency" is likely to be helpful in the further direction of diagnosis or the standardisation of judgments in this connexion.

The prime importance of the clinical study of the individual is indicated in the provisions of the recent Mental Deficiency Act as it is also in the Lunacy Acts. Whatever may be the various views held by biologists and psychologists as to the nature and origin of what is conventionally called "mental defect," no practical measures are or should be based primarily on such considerations; nor is there any necessity for discovering, even were such discovery practicable, any sharp line between the various groups into which it is convenient to divide the subjects of such defect from one another and from the "non-defective."

Professor Pearson seems further to imply, though he does not explicitly state, that the most

important object of the new legislation as regards the "mentally defective" is to segregate them in order to prevent their reproduction. If this were the case there might be some justification for his contention that all legislation of this kind should be based on accurate scientific knowledge regarding the hereditary transmission of the defect in question and of the mode of such transmission. Now, it is generally believed that much feeble-mindedness is "the result of heredity." Indeed, Professor Pearson says categorically that it is "absolutely certain that feeble-mindedness runs largely in definite stocks." What should be asserted is rather that observation indicates a much greater probability of offspring with marked mental defect being born of parents with similar defect than of those not so characterised. This belief is based only on accumulative observation of large numbers of cases; but the evidence so obtained is massive. In view, however, of the fact that there are frequent instances of cases of very marked mental defect arising in families of all social grades in which at least no near ancestral traces of such defect are discoverable, it should be borne in mind that, though in such cases the defect may be equally inborn and transmissible to descendants as in the others, no practicable legislation could prevent their appearance. Reference to the Report of the Royal Commission on the Care and Control of the Feeble-minded (1908) shows that considerations such as these led to the recommendation of segregation of certain mentally defective persons on the primary ground of their being harmful to themselves or to others, independently of the question of transmitted defect, although the apparently great frequency of such transmission was taken into consideration as indicating an incidental benefit to society which would probably follow on such segregation. It is clear that even should this additional benefit be admitted as certain, the question whether the transmissible defect was a "specific differentiation" or an "extreme variation of normal mentality" would be of no importance from a practical point of view.

It appears to us that Professor Pearson has not in this paper chosen a happy illustration of his initial contention, or duly justified his arraignment of those scientists and medical men who do not regard the biometrical method as the master key to all biological studies. He has failed to show that existing experience in the detection of cases of "mental defect," or, if he will, of "social inefficiency," is not sufficient to justify such segregation as is now practicable and seems desirable; nor has he indicated any method whatever for "standardising judgments as to the grade of social inefficiency which shall involve segregation."

A Clinical Study of the Serous and Purulent Diseases of the Labyrinth.

By Dr. ERICH RUTTIN, Privat-docent, Otological Clinic, University of Vienna. With an Introduction by Professor Dr. VICTOR URBANTSCHITSCH. Authorised translation by HORACE NEWHART, A.B., M.B., Instructor in Otology, University of Minnesota. With 26 figures in the text. London: W. Heinemann. Pp. 232. Price 8*s.* 6*d.* net.

Dr. Ruttin, who is well known especially to the younger members amongst the aural specialists of America and England, has produced quite an interesting monograph on diseases of the labyrinth within the limitations laid down by the title. He classifies the effects of suppurative middle-ear disease upon the labyrinth as (*a*) circumscribed labyrinthitis, (*b*) diffuse serous secondary labyrinthitis, (*c*) diffuse purulent manifest labyrinthitis, and (*d*) diffuse purulent latent labyrinthitis. According to Dr. Ruttin the diagnostic border-line between these conditions is usually fairly marked, yet it is purely and simply one of degree; and one feels inclined to ask in regard to (*b*), Why "serous"? That the suppurative condition present external to the labyrinth has not penetrated does not seem an adequate reply.

In discussing the reactions of the "fistulates" he finds that Valsalva's method of auto-inflation used simultaneously with the air compression will enable the fistula symptom to be obtained in cases where there is a very free Eustachian tube, when otherwise the test would fail. Dr. Ruttin analyses the cases of labyrinthitis, 108 in all, which are given *in extenso*, and occupy a liberal half of the brochure. This analysis of his cases is the most interesting part of the work, though a considerable amount of information is to be derived from a perusal of the section entitled "Therapy or indications for the radical and labyrinthine operations." When considering the large number of cases seen in the Vienna clinics we must bear in mind three factors—the small number of hospital clinics in Vienna, the large area from which their *clientèle* is drawn, and the ignorance of so large a proportion of the poor of the seriousness of ear disease. Consequently in England far fewer labyrinthine cases, both in proportion to other cases as well as actually, are seen in any hospital.

A Brief Review of the Work of Donders and the Progress made during the Last Fifty Years.

By ERNEST CLARKE, M.D., B.S. Lond., F.R.C.S. Eng., Senior Surgeon to the Central London Ophthalmic Hospital; Consulting Ophthalmic Surgeon to the Miller General Hospital. London: Baillière, Tindall, and Cox. 1914. Pp. 114. Price 2*s.* 6*d.* net.

IT was a happy thought which prompted Dr. Ernest Clarke to celebrate the jubilee of the publication of Donders's "Anomalies of Accommodation and Refraction of the Eye." As a compliment his brochure has been published first in Dutch, though the original work never appeared in the author's native language.

So far as the gratitude of the public for the inestimable benefits derived from the relief of discomforts and diseases due to eyestrain is concerned it would be difficult to praise the work of Donders too highly. As an original thinker, however, he has, if anything, been overpraised. It is an interesting psychological fact that originality is often divorced from practical utility. As has been said elsewhere, "If the architect is greater than the artificer, Young must be accorded a higher place in the roll of fame than Donders, whose rôle as a founder of modern ophthalmology none will dispute." Thomas Young first enunciated, *inter alia*, the principle of the "total refractive index" of the lens, obtained the data for measuring the curvature of the cornea, discovered astigmatism, observed the common occurrence of the hypermetropic type of refraction, and proved that accommodation is due to a change in curvature of the lens. Yet he failed to observe, or was not sufficiently interested to follow out, the extremely important practical bearings of his discoveries. It was reserved for Donders to fulfil this duty, and he

did it in a manner which left little more to be said on the subject. Dr. Clarke's review of the progress made during the last 50 years shows that the work done has been almost entirely confirmatory. There is a striking contrast between the severe style and carefully reasoned exposition of Donders's great work and the dogmatism and optimism of much of Dr. Clarke's eulogy. One cannot imagine Donders writing, "There is no functional trouble that may not be due to eye-strain." But in spite of these errors of enthusiasm there is much that is praiseworthy in the book, and not least we commend Dr. Clarke's observations on presbyopia. After all, Donders has erected his own monument—*aere perennius*.

Leçons sur la Lithiase Biliare.

Par A. CHAUFFARD. Avec 20 planches hors texte. Paris: Masson et Cie. 1914. Pp. 244. Price 9 francs.

THIS volume contains the substance of a series of lectures on gall-stones given by the author in his capacity as professor of clinical medicine in the Faculty of Medicine of Paris. The contents have the freedom of the clinical lecture, which allows the speaker to deal with certain aspects of the subject which appeal especially to him, without that encyclopædic attention to details which is required in a systematic text-book. So, too, we find but few references to other works and papers on the subject, the author's own experience supplying the greater part of the material of the volume.

In spite of the great multiplication of text-books there is still a place for clinical lectures, and this work will interest any reader who has occasion to devote attention to the subject. Some excellent plates of gall-stones, and of the normal and pathological anatomy—both gross and microscopic—of the biliary tract illustrate the subject. The author has included his inaugural lecture on the stability of morbid types and the conditions under which they vary, and though it is little germane to the main subject of the book, it is full of interest.

Elements of Surgical Diagnosis.

By Sir ALFRED PEARCE GOULD, K.C.V.O., M.S. Lond., F.R.C.S. Eng., Surgeon to the Middlesex Hospital. Fourth edition, revised and enlarged by the author with the assistance of ERIC PEARCE GOULD, M.A., M.Ch. Oxon., F.R.C.S. Eng., Radcliffe Travelling Fellow. With 10 radiographic plates and other illustrations. London, New York, Toronto, and Melbourne: Cassell and Co., Limited. 1914. Pp. 723. Price 10*s.* 6*d.* net.

ABOUT 11 years have intervened between the appearances of the third edition and this, the fourth, edition of Sir Alfred Pearce Gould's work. Thirty years have elapsed since the work first appeared, and any medical book which lasts 30 years must have great value. A comparison of the present issue with the form of the work at its first appearance will show how many and great are the changes that have taken place in surgery during those 30 years. The main alterations in this edition deal with abdominal surgery, and here the changes have been great, so that every chapter has been revised. The Basle nomenclature is being extensively employed in many schools of medicine, and therefore we think that the authors have done wisely in adding in brackets the names authorised by the Basle Congress after the older anatomical terms.

It is hardly necessary to say that diagnosis cannot be taught by a book, but must be learned in the ward and in the out-patient room; but a book such as this will give invaluable aid to the student by telling him what he should look for and what signs and symptoms are important. There are many works on diagnosis, but we know none likely to be of greater assistance to the student than this.

Quain's Elements of Anatomy.

Edited by Sir EDWARD ALBERT SCHÄFER, F.R.S., Professor of Physiology and Histology in the University of Edinburgh; JOHNSON SYMINGTON, M.D. Edin., F.R.S., Professor of Anatomy in the Queen's University of Belfast; and THOMAS HASTIE BRYCE, M.A., M.D. Edin., Professor of Anatomy in the University of Glasgow. Eleventh edition. In four volumes. Vol. II., Part II.: Splanchnology. By J. SYMINGTON, M.D., F.R.S. London, New York, Bombay, Calcutta, and Madras: Longmans, Green, and Co. 1914. With 349 illustrations, many of which are coloured. Pp. 392. Price 10*s.* 6*d.* net.

IN this volume an account is given of the digestive, respiratory, and genito-urinary systems, as well as of those structures grouped together as the ductless glands. A separate chapter dealing with the peritoneum is contributed by Mr. P. T. Crymble, of Belfast.

Probably the most conspicuous new feature of the eleventh edition is the greater attention given to topographical anatomy as studied in sections of the frozen body. With this type of work no one is better qualified to deal than Professor Symington, and the many new illustrations depicting such sections of the body are testimony to the perfection of his methods, and of the value that he attaches to this mode of studying anatomy. We are glad to see reproduced here many of the illustrations prepared by Professor G. D. Thane and Sir R. J. Godlee for the Appendix to the tenth edition. The text has been brought well up to date, and Professor Symington's widespread researches are evidenced in every section of the work.

The whole forms a worthy complement to those volumes of the eleventh edition already published, and while maintaining the best traditions of the earlier issues of Quain's Anatomy it is also well abreast of the times. The B.N.A. terminology has been used throughout.

LIBRARY TABLE.

Insanity in Everyday Practice. By E. G. YOUNGER, M.D. Brux., M.R.C.P. Lond. Third edition. London: Baillière, Tindall, and Cox. 1914. Pp. 180. Price 3*s.* 6*d.* net.—This small book, first published in 1904, has now reached a third edition. It was written to acquaint the general practitioner with the broad outlines of insanity within the compass of a brief treatise. The size of the book, indeed, necessitates that the outlines should be brief, and we are in such cases always a little doubtful whether the aid of the epitome and the diagram may not lead the reader to look in the patient for that which clinically he will not find. However, as in most cases the practitioner is called upon merely to certify, some slight knowledge of the manifestations of mental disorder is all that is required. From this book he will get so much, and in addition useful hints as to how to meet and examine a patient. He may also learn a string of some of the titles which may be affixed to a disorder if he is called upon for a diagnosis, and that in psychiatry is much.

Outlines of Theoretical Chemistry. By FREDERICK H. GETMAN, Ph.D. (Johns Hopkins). New York: John Wiley and Sons. London: Chapman and Hall. 1914. Pp. 467. Price 15*s.* net.—In the main this book deals with chemico-physics, but the

author identifies theoretical chemistry with physical chemistry. The title at first sight might be taken to mean that the book would deal with such subjects as molecular constitution, combining weight, law of multiples, equivalents, and so forth. Such matters are, however, dismissed in the opening chapter of 20 pages on fundamental principles, which is succeeded by one on the classification of the elements, and by others on the electron theory, gases, liquids, solids, and solutions, until in Chapter VIII. we enter into the real domain of chemico-physics with a section on osmotic pressure. Association, dissociation, thermo-chemistry, electrolytic equilibrium, and so on, follow in satisfactory sequence. This plan is novel and there is no objection to it on educational grounds. On the whole, the book meets the student's needs by presenting the subject in intelligible order, but in places the reader possessing only moderate mathematical attainments will come up against difficulties.

The One Outside. By MARY FITZ-PATRICK (Mrs. W. C. Sullivan). London: Munsel and Co., Limited. 1914. Pp. 245. Price 3*s.* 6*d.* net.—The author of this book, the wife of a well-known medical man, has the true spirit of the short story teller. She writes with distinction, obtains her effects with artistic brevity, and displays knowledge both of human nature and of the particular environments in which she places her different characters. The first story in the book, which gives the title to the collection, is perhaps the best. Surely only in Ireland could a man desert his wife for 16 years and then return as if the exploit was a reasonable one—as if economy and fidelity during the absence atoned for the sin. However, given the situation the inevitability of the tragedy that followed is well conveyed by Mrs. Sullivan in a moving little narrative. "The Doctor's Joke," which contains, by the way, a lapse in peerage lore, is merry and bright and a little trivial, conveying the impression that the author works best in a sad atmosphere, an impression confirmed by reading "A Daughter of France" and "The Little Sister," where the political conditions of Ireland again provide a background for the drama. We hope this book will meet with the reception which its literary craftsmanship merits.

Introduction to Modern Inorganic Chemistry. By J. W. MELLOR, D.Sc. With illustrations. London: Longmans, Green, and Co. 1914. Pp. 684. Price 4*s.* 6*d.*—The success of his "Modern Inorganic Chemistry," which was favourably reviewed in our columns of Feb. 22nd, 1913, has induced Dr. Mellor to write an introduction to this book, which brings the student from a state of knowing nothing of the science to knowing something. And in making this step he has the advantage of being grounded on correct foundations. A clear survey of facts is presented, upon which a generalisation of principles is calculated to dawn. It is interesting to notice how gradually the author approaches technicalities. The opening chapters show a charming simplicity of narrative; the closing ones begin to assume that a groundwork has been gained. The method is good and well executed.

MISCELLANEOUS VOLUMES.

Human Dereliots, edited by Dr. T. N. KELYNACK (London: Charles H. Kelly. 1914. Pp. 341. Price 5*s.* net), consists of a number of medico-sociological studies for teachers of religion and social workers. After a "preface" by the editor and a "foreword" by Sir Thomas S. Clouston, Dr. Robert Armstrong-Jones writes of Mental Derelicts; Dr. F. R. Percival-Taylor of Idiots and Imbeciles; Dr. T. Claye Shaw of Lunatics; Dr. R. L. Langdon-Down of the Epileptic; Dr. Mary L. Gordon of the Inebriate Derelict, the Problem in Relation to Women, and Dr. G. Basil Price of the same problem in relation to men; Mr. James Devon of the Criminal Derelict; Dr. R. F. Quinton of the Recidivist; Dr. James P. Sturrock of the Mentally Defective Criminal Derelict; Dr. Charles H. Melland of the Vagrant; Dr. Helen M. Wilson of the Prostitute; Mr. E. Musgrave Woodman of Senile Derelicts; Dr. C. A. Adair Dighton of the Derelict Deaf; Mr. T. Herbert Bickerton of the Derelict Blind; Dr. John W. Ballantyne of Pre-natal Influences of the Human Derelict; and Dr. C. W. Saleeby of Eugenics and the Human Derelict. The book aims at providing all workers engaged in enterprises striving for human betterment with a concise and reliable presentation in non-technical language of such essential facts, guiding principles, and effective processes as are likely to be of assistance. Seeing that an "under estimate" by Sir Thomas Clouston of the derelicts of various kinds in Great Britain places them at a million, the national importance of the problem dealt with in this book by the various essayists from the standpoint of their own specialties is obvious. Medical officers of health, school medical officers, tuberculosis officers, and medical officers of the other public medical services are likely to find much interesting and serviceable information herein.

A very wide ground is covered by Dr. ELIZABETH M. SLOAN CHESSER'S book, *Physiology and Hygiene for Girls' Schools and Colleges* (London: G. Bell and Sons, Limited. 1914. Pp. 231. Price 2*s.*). Chapters I. to XII. inclusive deal with the elementary anatomy and physiology of the human organism in quite sufficient detail for examination purposes, with personal hygiene, domestic sanitation, home decoration and furnishing, dietetics and cooking, clothing, physical culture, nursing and the sick room, first aid and domestic medicine, and the care of the child, all of which offer a wide field of study for girls, and one concerning which a certain amount of knowledge is now recognised as desirable and even necessary for the women of the modern race. ——Notwithstanding the acknowledgment of the desirability of a suitable instruction of our youth of both sexes in the problems of sex, but graduated according to the needs and degree of development of boys and girls, we are entirely unable to commend two books on the subject now before us—viz., *Ten Sex Talks to Boys 10 Years and Older*, and *Ten Sex Talks to Girls 10 Years and Older* (London and Philadelphia: J. B. Lippincott Company. 1914. Pp. respectively 187 and 193. Price each 4*s.* 6*d.* net). We fully appreciate the obvious sincerity of their author, Dr. I. D. STEINHARDT, and can only say that we cannot approve of his method. Each book contains not only material suitable for young children of either sex, but also much that is suited only for those in whom adolescence is well advancing, and yet more that should be reserved for the approach of matrimony. To put this all together into the hands of a boy or girl of "ten years and older" would be, in our opinion, monstrous. For instance, the detailed instruction about syphilis and gonorrhœa, with the half-tone of a syphilitic infant which appears in both books, is totally unsuited not only for children but for most girls and young men. A general knowledge of the dangers attendant on impure intercourse is perhaps desirable for young people, but to introduce them to a very pathological venereal museum is as unnecessary as it is repellent. The author seems simply to have substituted the horrors of a hell in this life for those of a hell hereafter as a method of terrorising into moral behaviour, and there is no reason to suppose that the one will prove one whit more efficacious than the other has done.

The *Writers' and Artists' Year Book* aims to serve authors and contributors to journalism by giving them the necessary information to enable them to place their articles to the best advantage. New features in this edition are an alphabetical index of editors and an article on publishers' agreements, describing the four main kinds of agreement between author and publisher, with a specimen form.

JOURNALS AND MAGAZINES.

Brain: A Journal of Neurology. Edited by HENRY HEAD, M.D., F.R.S. Vol. XXXVII., Part I., September 1914.—The current number of *Brain*, although it consists of two papers, really constitutes an important monograph on the clinical and pathological aspects of syphilis

of the nervous system considered in the light of the Wassermann reaction and the effect of treatment by salvarsan. The first paper, by Dr. Henry Head and Dr. E. G. Fearnsides, is devoted to the clinical aspects of syphilis of the nervous system. It is claimed in this paper, and the proof adduced certainly seems convincing, that all manifestations of syphilis of the nervous system are consequent on the direct activity of the spirochæta pallida. This organism, it is asserted, resides and manifests its activity either in the supporting tissues of the nervous system, fibrous or vascular, or in the nerve elements themselves. We thus have two distinct classes of diseases of the nervous system the result of syphilis—the one parenchymatous, and therefore a true disease of this system; the other interstitial, and therefore strictly speaking only a nervous disease in virtue of the effects produced upon the nervous structures by pressure or other effect upon its elements or through interference with its blood-supply. In the former are such diseases as general paralysis of the insane and tabes dorsalis—often spoken of since the time of Fournier as parasyphilitic conditions; in the latter such conditions as meningo-myelitis, gummatous meningitis, and isolated cranial nerve paralysis, generally spoken of as syphilitic conditions. This distinction carries with it a very important consequence, for whereas the former class is not amenable to treatment by salvarsan, the drug being unable to reach the organism, the latter does yield to treatment if only treatment is resorted to early enough and with sufficient energy.—Dr. James McIntosh and Dr. Paul Fildes contribute the second paper, which compares the lesions of syphilis and parasyphilis. It explains the reason and mode of invasion of the nervous system by the organism—the affection of the interstitial and vascular tissues in the one group and the parenchymatous nature of the lesion in the other, although the symptoms in each group are due to interference with the functions of nervous structures. It also seeks to show that, although in the parasyphilitic diseases the affected neuron does degenerate to its limits, yet this degeneration does not spread from one neuron to another, the progressive character of the disease being the result of the continued presence of the organism. Treatment is effective in combating interstitial syphilis of the nervous system, but to be successful must be used early and often, and it is therefore very important to familiarise one's self with early indications of such conditions, for unless treatment is early resorted to the nervous structures are apt to be irremediably damaged as a result of the affection of the interstitial tissue. Parenchymatous syphilis, on the other hand—parasyphilis—is not influenced by treatment, as drugs in the blood stream are not able to pass into the nervous substance to destroy the spirochætæ. If salvarsan should succeed in penetrating into the brain or cord it produces such toxic symptoms as to make its use impossible. In the opinion of the writers it consequently follows that "the intrathecal injection of salvarsanised serum or of neosalvarsan in its present form can have no permanent vogue."

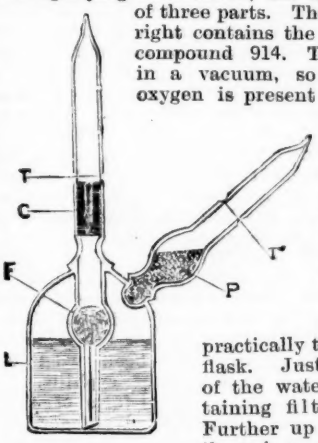
Annali dell' Istituto Maragliano. Vol. VII. Fasc. 6. Oct. 31st, 1914. Piazza del Popolo 11, Genoa.—This number contains two papers only. The first, by Dr. Verdoliva, is a clinical and experimental contribution to the study of infection by the M. catarrhalis of Pfeiffer. He obtained from the blood of patients a culture of this micro-organism which, when injected into guinea-pigs and mice, produced lesions characteristic of influenza. His experiments point to the conclusion that this disease is especially amenable to energetic vaccine therapy, both curative and preventive, and he calls attention to the statement of L. Jehle, who, in an epidemic occurring in infants in whom the micrococcus was found in the pharyngeal secretion, was able to cut short the attack in 24 hours by instilling pyocyanase into the nasopharyngeal cavity. The other communication is by Dr. A. Bertolini on the expectoration in pneumonia. Among other interesting observations we may mention that the crisis of the disease was not accompanied by any "crisis" in the sputum, and especially that there was no marked change in the amount of chlorides contained in it. With regard to the albumin reaction he found that without being an absolutely specific index in pulmonary tuberculosis it constituted a valuable diagnostic element when taken in conjunction with other clinical evidence.

Reports and Analytical Records
FROM
THE LANCET LABORATORY.

AMPSALVS.

(MESSRS. BRESILLON AND CO., GAMAGE BUILDINGS, HOLBORN, LONDON, E.C.)

THE ampsalvs provides an apparatus for the instantaneous preparation of an aseptic solution of novarsenobenzol (Ehrlich's 914) and at the same time for the aseptic filtration of this solution and for its subsequent aseptic withdrawal into the injection syringe. As will be seen from the accompanying illustration, the apparatus consists of three parts. The bulb tube on the right contains the organic arsenical compound 914. The compound is in a vacuum, so that no air or oxygen is present which can have a deleterious action, thereby increasing its toxicity. The flask itself, marked L, contains sterilised distilled water. The vertical tube F is submerged in this water to practically the bottom of the flask. Just above the level of the water is a bulb containing filtering medium. Further up in this tube at C there is a rubber tube which receives the nozzle of the syringe. It will be seen that the three parts of the apparatus are hermetically sealed. The procedure is not difficult. The ampoule P is broken at the point T where it has been filed somewhat deeply in the form of a ring round the tube. A steel stylet is then introduced into the tube and its lower bulbous end broken. The novarsenobenzol thus falls into the water and rapidly dissolves. Next at the point T on the vertical tube is a similarly filed indentation. This is broken, leaving a small portion of the rubber tube projecting. The nozzle of the syringe is then inserted into this open end and the aseptic contents withdrawn for injection. In a few words, this well-contrived apparatus ensures the use of the drug in an unimpaired form and in an aseptic solution. The advantages claimed for 914 in the treatment of syphilis are that the injections are not made with so complicated a technique as in the case of 606 and more concentrated injections of 914 can be used as they are not hæmolytic. Moreover, 914 does not coagulate the proteins and forms no precipitates with blood.



IALINE.

(MESSRS. BURT, BOULTON, AND HAYWOOD, LIMITED, 64, CANNON-STREET, LONDON, E.C.)

We have carefully examined ialine in the laboratory, and we are able to substantiate completely the claims made in regard to it. It is a perfectly clear dark brown fluid which dissolves in all proportions in water to an equally clear fluid. We had no difficulty in splitting it up into fatty acids and cresols. The separated cresols measured exactly

50 per cent. by volume, and judging from their iodine combination value they show a higher germicidal efficiency than pure phenol itself. The indications were in favour of a carbolic coefficient well over 3. The preparation strikes no colour with phenolphthalein, which gives a deep red with free alkali. As an effective detergent and antiseptic this preparation will be appreciated in medical and surgical practice.

(1) UROSOLVENE; (2) IODATOL; AND (3) SANUSIN.

(THE BRITISH DRUG HOUSES, LIMITED, GRAHAM-STREET, CITY-ROAD, LONDON, E.C.)

1. Urosolvene is the name given to a combination of hexamine and lithium benzoate. This latter salt is regarded as of greater therapeutic value than the sodium acetate which occurs in the hexamine compound known as cystopurin. The formula is based on the antiseptic action of hexamine in the urinary passages which, as is well known, is increased by an acid reaction, the assumption being that formaldehyde is thus liberated. Lithium benzoate produces the desired acidity. The claims of this compound in regard to its action as a solvent of uric acid are well worth attention. 2. Iodatol is an iodised oil in which while the iodine is available it is not actually in a free state. It presents a method of administering iodine effectively in those cases where the iodides are badly borne. Iodatol is prepared in three strengths containing 10, 20, and 25 per cent. of iodine respectively. It is offered as an efficient substitute for the German preparation iodopin which has been used as an injection in the treatment of syphilis. 3. Sanusin is contained in a special form of suppository, which undoubtedly has advantages. It is known as the sempule, which has already been described in our columns. The formula of sanusin is an excellent one for hæmorrhoids and certain vaginal affections, inasmuch as it consists of a combination of resorcin, boric acid, balsam of Peru, and zinc and bismuth carbonate. It is an antiseptic, soothing, and healing application.

AZOULES.

(MESSRS. ALLEN AND HANBURYS, LIMITED, 48, WIGMORE-STREET, LONDON, W.)

These are handy little glass tubes containing ligatures and sutures of various descriptions already sterilised. The series before us includes twisted silk No. 1, silkworm gut, plain catgut size 2, plain iodised catgut size 0, 20-day tanned iodised catgut size 0, chromic catgut No. 0, and blood-vessel suture with needle. Of these we have submitted specimens to culture and bacteriological examination, with negative results. The azoules should prove useful to the surgeon, and they have the advantage, at any rate from the patriotic point of view, of being prepared by Messrs. Allen and Hanburys at their laboratories in this country.

SCOUT'S SOAP.

(EDWARD COOK AND CO., LIMITED, BOW, LONDON, E.)

This soap has been specially prepared for the use of the troops at home and abroad. According to our examination the ingredients occur in a proportion which is calculated to secure not only detergent but antiseptic action also. The fatty bases are of vegetable origin. The soap is somewhat soft, is readily latherable, and quickly and effectively does its work. The antiseptic present is a well-known powerful one of the camphor group showing considerable superiority as a germicide to carbolic acid. It is an excellent soap for washing slight cuts, bruises, and wounds.

DUBSTIC.

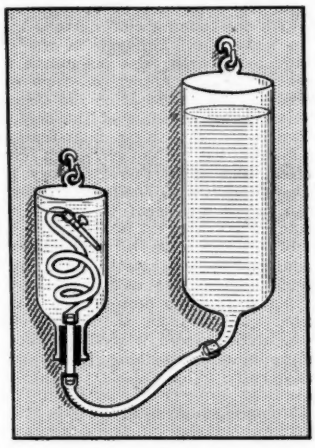
(THE STRAND CHEMICAL COMPANY, LIMITED, 83, CLERKENWELL-ROAD, LONDON, E.C.)

At the present time this preparation is likely to prove of distinct service. It consists of a stick of wax-like material containing a well-approved antiseptic which we identified. Rubbed on the skin, a greasy film is deposited which produces a feeling of suppleness, and it apparently prevents chapping and cracking. Moreover, it is most useful applied to the feet when marching. By the consistent application to the skin of some such preparation of this kind the soreness and blistering which is an annoying occurrence both in the saddle and in the boot would in many instances be avoided.

New Inventions.

AN ASEPTIC IRRIGATOR.

GENERALLY speaking, it is very difficult to keep the rubber tube and the cannula of an irrigator sterile. While this may be possible in a modern aseptic operation room, it is much less easy, or altogether impracticable, in the



consulting room of the practitioner and in those provisional operation rooms of which so many are now established in the neighbourhood of the battlefields. There one is obliged to give up the principles of the aseptic method and to resign oneself to antiseptic measures.

The modification here described of the ordinary irrigator makes it possible, even under unfavourable circumstances and with the help of simple means, to keep the cannula and the tube absolutely sterile, and to prevent infection of the hands of the operator by a non-sterile cannula. The accompanying illustration will elucidate the principle involved. Let the rubber tube of the irrigator pass through the opening of another glass reservoir (a bottle without a bottom may serve), but so that the tube, with the help of a cork and a piece of glass tubing, fits exactly in that opening. This second reservoir serves to hold the tube and the cannula, which, of course, must be provided with a cock when not used, and contains an antiseptic solution. The apparatus being a kind of syphon, it is clear that the brim of the second reservoir must be kept at a lower level than the surface of the liquid in the irrigator proper, otherwise the contents of the latter would not flow when the cannula is taken out for use.

University of Leyden. Professor Dr. E. C. VAN LEERSUM.

THE LANCET.

LONDON: SATURDAY, JANUARY 2, 1915.

Civil Medical Practice and the War.

WE are able to publish this week a communication which has been addressed by the War Office to the General Officers Commanding-in-chief of the several Army Commands, and which it will be seen bids fair to provide in a very effective manner for many of the difficulties that have arisen from the dislocation of medical practice following upon the calling up of the Territorial Force. These difficulties have been enumerated in THE LANCET on several occasions, and have formed also the subject of considerable correspondence. A letter from Sir DONALD MACALISTER, President of the General Medical Council, which will be found on page 43 of this issue of THE LANCET, shows how clearly the Council have seen the difficulties created, especially for general practitioners; and it shows also that the proposals of the Executive Committee of the Council to meet these difficulties have been accepted by the War Office.

The Army Council has now frankly recognised the inconvenience alike to the civil population and to the medical officers of the Territorial Force caused by the stationing of those officers in so many instances at a distance from their civil sphere of action; and in particular, of course, is that inconvenience present when the officers in question are general practitioners. As a matter of fact many members of the *à la suite* staffs of the Territorial Base Hospitals, being for the most part members of the honorary staffs of the big voluntary hospitals of the country, have been able to give part of their time to the civil duties which they had been discharging previous to the war; while in some of the Base Hospitals, in London at any rate, an application of the rota system has enabled the Territorial Medical Officers to fulfil double functions with some smoothness, though no doubt in many cases with great personal strain. But Territorial Medical Officers who are in general practice have seldom been able to exercise any supervision over the practices which they were suddenly called upon to leave, and undoubtedly the ensuing plight was often quite a grave one, both for the officers and for the community amongst which the regular work of their lives had been hitherto conducted. The War Office has met the position precisely by permitting such officers "to effect exchanges, direct or indirect, with Territorial Medical Officers in the new locality when possible." We do not know to what general extent this permission will ease the situation though a certain number of medical officers will be glad to take immediate advantage of the concession; but where to effect these exchanges is not feasible the War Office also permits that "the places of medical officers not desiring to accompany their units may be taken by junior medical officers willing to take temporary commissions and serve with such units; the original medical officers being demobilised until the return of the units to their own localities, or until their services can be otherwise utilised there." By this arrangement a great increase in the flexibility of the Territorial Medical Service is at once introduced, and we trust that the officers of that service, when due cause exists, will not be reluctant to take advantage of the opportunity now available. After all, the condition of things which existed immediately after mobilisation of the Territorial Force has been complained of, and it will be somewhat unreasonable if no use is made of the remedy provided by the War Office. There will undoubtedly be a feeling of reluctance among the senior medical officers to confess any unwillingness to remain with the colours, but this is a feeling which should not necessarily be given way to. In the present state of the war, with its promise of long duration, a man's military duty to his country may be fully discharged by his remaining at civilian work, and it is of first importance to the country from a military point of view that the civilian health should be maintained. As a rule it is those very medical officers who are now offered a chance of temporary demobilisation whose presence is desired among their own people, and any medical officer of the Territorial Force who feels that it is his duty to return to his own locality, there to await further utilisation of his services, ought to be able to act in accordance with his conscientious conviction, and with no lurking sense that he has defaulted from a high patriotic standard.

In another column there will be found an abstract of an address delivered by Dr. NORMAN WALKER, the convener of the Scottish Medical Service Emergency Committee, at a recent meeting of medical practitioners in the Glasgow district. The Scottish Medical Service Emergency Committee, it will be remembered, was constituted for the purpose of assisting to meet the immediate difficulties in Scotland in regard to medical practice among the civilian population owing to the departure of practitioners upon military duty. The Committee took especial notice of the difficulties of general practitioners in the country, where in the case of absence the employment of a locum tenent is necessitated, as the distance between the houses of the patients prevented any practitioner from taking over the duties of another in the way that is possible among urban practitioners. The Committee is to be congratulated upon the direct manner in which it has tackled the situation in Scotland, while we hope that the many hardships in medical practice, which it was created to deal with, will be sensibly abated by the sympathetic attitude of the War Office. Dr. NORMAN

WALKER showed quite clearly, in an address which was obviously the outcome of personal knowledge, that the obtaining of locum tenents by general practitioners is difficult and expensive, and that the temporary transfer of patients to a local colleague may bring business complications undreamt of by the parties to some vague and generous arrangement for "looking after the practice while the doctor is away." The new arrangements sanctioned by the War Office should restore a good many practitioners to their practices, and should thus assist the Scottish Medical Service Emergency Committee.

A Judge on Professional Secrecy.

IN a recent issue we printed certain observations made by Mr. Justice AVORY in charging the grand jury at Birmingham, together with an expression of the opinion that the learned judge might not find himself in general agreement with the medical profession. He was dealing with the question of the maintenance of professional secrecy where its violation might assist the prevention or punishment of crime, and his views were enunciated with particular reference to the crime of abortion and to a prisoner who had been committed for trial at the Birmingham assizes upon a charge of murder. The committal had been made upon a coroner's inquisition only, for the magistrates had decided that the evidence attaching guilt to the prisoner was insufficient; and the judge's comments arose out of his sense that if one of the medical men who had attended the deceased woman, upon whom an illegal operation had been performed, had informed the police of the circumstances while she was alive, her evidence identifying the actual abortionist might have been secured. This would beyond question have been a very desirable result, and it is only the means by which Mr. Justice AVORY considers that it should have been obtained that we desire to comment upon. We have already given his observations in full,[1] and we now only quote two passages. He said: "Under circumstances like those in the present case, I cannot doubt that it is the duty of the medical man to communicate with the police or with the authorities in order that one or other of those steps may be taken for the purpose of assisting in the administration of justice. No one would wish to see disturbed the confidential relation which exists, and which must exist, between the medical man and his patient in order that the medical man may properly discharge his duty towards his patient; but there are cases, of which it appears to me that this was one, where the desire to preserve that confidence must be subordinated to the duty which is cast upon every good citizen to assist in the investigation of a serious crime." Further, Mr. Justice AVORY said, after alluding to an opinion[2] to which he had formerly been a party with another counsel when he was at the Bar: "It may be the moral duty of the medical man, even in cases where the patient is not dying or not unlikely to recover, to communicate with the authorities when he sees good reason to believe that a criminal offence has been committed." It is this general statement of a medical man's duty to violate professional confidence in circumstances which do not appear to us to be absolutely compelling from which we dissent, although with full appreciation of the importance of preventing or punishing crime, and with a particular detestation of the crime of the abortionist. We are constrained to place in the balance against these sentiments the value which we set upon a man's honour in general and upon professional honour in particular, and we also claim weight for the results attained by the maintenance of such honour at its highest standard. In the special phase of professional honour under consideration—the keeping of the patient's secret, whether a guilty secret or not—there is this point to be borne in mind. The medical man is there to save the patient's life and to restore the patient to health, if he can; not to aid the police by playing the detective—a part which might be quite congenial in any other circumstances. If he once reveals his patient's secret, with, be it remembered, the practical certainty that his doing so will become publicly known, he will destroy belief in his professional discretion and in his personal desire to deserve confidence, wherever his conduct is read or spoken of; and any general adoption of his course of action would diminish or destroy all trust in his profession everywhere. So wide a development of this distrust among the public would have the result that a guilty patient, and particularly the victim of the abortionist (and sometimes other patients with no fault of their own to hide), would conceal illness with fatal results, or with no less serious consequences would seek unqualified treatment, perhaps at the hands of the originator of the mischief. At the worst the maintenance of professional secrecy can only have the consequence, admittedly an undesirable one, of allowing an uncertain number of abortionists a somewhat extended amount of rope before their lawful fate overtakes them. Its violation, by destroying the confidence of patients in their medical advisers, would affect the welfare of a large class of persons who otherwise would seek medical aid in time of physical need.

In thus considering Mr. Justice AVORY'S observations we are primarily dealing with what was in his mind—namely, the crime of abortion. If, however, we try to suggest principles to guide medical men, they must be more or less of general application. The circumstances of each particular case must influence the individual decision, and cases will vary infinitely, but some general rule must be applied as far as possible, whether the patient is suffering from the effects ot abortion or, for

[1] THE LANCET, Dec. 19th, 1914, p. 1430.
[2] The opinion in question was received about 18 years ago, in reply to a stated case submitted by a committee of the Royal College of Physicians of London, from Sir Edward Clarke and Mr. Horace Avory.

example, of rape or attempted self-murder. The victim in one of these latter instances may desire to shield the criminals or may be anxious for personal reasons to avoid publicity, quite as reasonably as may the woman who has evaded motherhood. In seeking for a general principle applicable to the circumstances indicated by Mr. Justice AVORY, we do not doubt that the duty is cast upon the medical man of bringing a criminal to justice by every legitimate means, and that he should use his influence to obtain his patient's consent to his informing the police. In this he may obtain the aid of any relations or friends of the patient who may be aware of the illness and its cause. He may tell the patient that participation in the criminal act will probably be condoned, but we must not forget that, where abortion is in question, the woman will have been guilty of an offence, as well as naturally desirous to avoid public exposure. Let us here suppose that she refuses to face exposure, and entreats her medical attendant not to "give her away," reminding him that she consulted him, relying upon his professional honour. It is difficult to imagine any medical man, except under possible but very unusual conditions, setting the law in motion in such circumstances, or any member of his profession blaming him for not doing so; and we fail to see any great difference between a case where consent is withheld by the patient, and one where it almost certainly would be refused if the question were asked. The case before Mr. Justice AVORY was of a not unusual character. If the deceased, knowing herself to be dying and without hope of recovery, had told anyone the name of the abortionist, her words so spoken could have been given in evidence against the person implicated, so that the failure of the medical man to inform the police in time did not necessarily imply that justice would be defeated. That this defeat, in fact, followed provoked the observations from which we dissent, and which are carried so far that even in the case of a patient about to recover the medical man is assigned a moral duty to betray a patient's confidence. It is from so general a statement of obligation that we differ from Mr. Justice AVORY. Circumstances may occur in which without a patient's consent a medical man may feel it his duty to divulge that which the patient would prefer to keep hidden, but as a general rule the secret must be respected, and the proverbial exception does not seem to have arisen in the instance under comment. Such exception would arise if neglect to inform the police would increase the patient's danger, as where an attempt at poisoning is suspected; or if the patient, being unable to form a sound judgment, would clearly be benefited by the revelation. As a rule the test must be the probable benefit of the patient from the point of view of a medical man to whom is entrusted the care of the patient's health. A duty to the public may exist, but in the peculiar circumstances in which the medical man exercises his profession duty to the patient must sometimes override it.

We may allude here to words often quoted in connexion with professional secrecy which were uttered by the late Lord BRAMPTON in the course of his summing up in the civil trial of KITSON *v.* PLAYFAIR. Mr. Justice HAWKINS, as he then was, appears to have held an opinion opposed to that uttered by Mr. Justice AVORY, and one in which he also differed, or claimed to differ, from certain medical witnesses who had appeared before him, putting the case in favour of inviolability higher than they had done. As far as Mr. Justice HAWKINS'S observations on this occasion go they are those of a judge of great experience in the trial of crimes. Their effect is that there is no obligation upon a medical man to betray to the police the confidence of a patient whom he suspects of having had abortion procured upon her. Criminal abortion was not in question in the case of KITSON *v.* PLAYFAIR; nor must Lord BRAMPTON'S words be treated as a laying down of the law on the subject, or as anything more than the *obiter dicta* of a judge upon a topic not strictly relevant to the case before him, but indicating how he would have regarded a particular course of conduct in the exercise of professional discretion. Upon occasions, in the interest of his patient or in the maintenance of the traditions of his profession, a medical man may have to put up with judicial blame for omitting to do what he deems to be wrong, whatever Mr. Justice HAWKINS or Mr. Justice AVORY may have said. He may, in short, have upon occasions to enjoy the sympathy of his profession, and at the same time to run the risk of disapproval on the part of those administering the law. He will remember that there are courses of conduct as to which honestly held opinions may differ, each course being affected by the point of view of its equally conscientious holder. We strongly advise every practitioner who finds himself in charge of a case of abortion to summon a fellow practitioner of special knowledge to his assistance.

QUEEN'S UNIVERSITY OF BELFAST.—The Vice-Chancellor's report has just been issued for the year 1913–14. Apart from the satisfactory fact that there is an increase of 72 in the number of entrances of students for the year, the only striking features of the report are the preponderating weight of students in the Faculty of Medicine and the number of women at the University. Thus, in the Faculty of Medicine 262 students (232 men and 30 women) were enrolled during the year, a number which is 10 in excess of the students in all the other faculties combined. In the same Faculty of Medicine there were 30 women, while in the other faculties there were 108 women (69 in arts, 35 in science, and 4 in commerce). Indeed, if the number of women in attendance at Queen's University of Belfast (138) is subtracted from the total number of all students (514) the actual number of men students is 376, while in the non-medical faculties there were really 108 women students to 144 men.

Annotations.

"Ne quid nimis."

THE SHORTAGE OF MEDICAL STUDENTS.

WE published last week a letter from Sir Donald MacAlister in which he gave figures supplied to him from the various schools of medicine throughout the kingdom showing a marked falling off in the number of medical students pursuing their curriculum at the end of 1914 as compared with those undergoing education at the corresponding date in the preceding year. The President of the General Medical Council pointed out that perhaps from 200 to 300 fewer practitioners would yearly be added to the medical profession for some time—an average shortage of 25 per cent.—and this is a serious matter, implying a numerical weakness in our body which will follow for a period the establishment of peace. The extent of the shortage and its duration are difficult, or impossible, to estimate, for the war now raging is without any parallel in history from which we can form opinions. The war has absorbed, and is likely to absorb, so many young men who otherwise would be undergoing training for various professions that education for the peaceful callings of civil manhood, so far as able-bodied youths of military age are concerned, is for the moment largely arrested. Indeed, a shortage of 25 per cent. in those preparing for admission to professional life might, we conceive, easily be exceeded in the case of other professions. This is not surprising, for a supply of medical men is necessary to the health of the country, while students who remain at the medical schools now are helping in the conduct of the struggle by their assistance in the hospitals. An anxious demand for the services of medical men and the expectation of high efficiency on their part will probably be observable when peace renders it possible to review the position and make dispositions for the maintenance of the health of the nation in the future. It will then be known to what extent there is shortage, and to what extent the law of supply and demand will give rise to higher emoluments, and so to an increase in the number of those seeking medicine as a career. If a prophecy may be hazarded, it seems not improbable in the circumstances that the medical profession of the not distant future will offer better inducements to young men of ability than it has done hitherto, and that a raised and well-sustained standard of efficiency will be the result. In the meanwhile there is likely to be a certain shortage as there will be in all the professions, and the premature closing of many promising young lives will make itself felt for long years to come. There will be inconvenience to the public, and a demand will make itself felt more urgently than hitherto for the distribution of medical practitioners through the country in a more symmetrical manner, causing the shifting of some who have chosen populous centres, well supplied already, to less attractive areas, where the need for their services is greater and where the competition of their colleagues is less keen. The advocates of a State Medical Service will see here an opportunity. Its opponents will point to the advantages of a free hand being left to those concerned, subject only to such pressure as the law of supply and demand may exert.

EDWARD ALANSON, A PIONEER OF SURGICAL CLEANLINESS.

ONE of the most interesting consequences of the study of the history of medicine lies in the adumbrations of modern principles and practices which we are accustomed to regard as a modern dayspring piercing the darkness of an age of night. An interesting example of this is given us by Mr. R. W. Murray in an account of one whom he rightly describes as "one of the greatest surgeons Liverpool has ever produced."[1] Edward Alanson, who flourished from 1743 to 1823, went to Liverpool in 1763 to study medicine as apprentice to Mr. Pickering, one of the surgeons to the Liverpool Infirmary. On the completion of his apprenticeship in 1768 Alanson went to London, where for two years he was a pupil of John Hunter, and returned to Liverpool in 1770 to commence practice, being elected a surgeon to the infirmary. The important fact in regard to Alanson's position as a pioneer of modern surgical principles lies in his views regarding the general treatment of patients in hospitals, his suggestions for obviating the vitiated atmosphere, and his advocacy for surgical cleanliness, as quoted at length by Mr. Murray. Briefly summarised, it may be stated that he urged that no ward should be occupied for more than four months, but that then it should be thoroughly cleansed, and the walls scraped and whitewashed; that the bedding should be of such material (chaff and hay) as would permit of its being frequently changed; that it should be exposed to the air for four hours daily; that infected clothes and bedding should be baked in an oven; that gangrenous or putrid wounds should be isolated; that there should be open windows in every ward; that there must be no overcrowding, for which reason chronic, incurable, or infectious cases should not be accepted; that convalescent homes should be established in connexion with infirmaries; that particular, airy rooms should be provided for operation cases, never be long inhabited, and should be alternately cleaned and ventilated; and that all bedgear used in "putrid cases" should be cleansed and disinfected by baking. Alanson in his own practice avoided ligaturing *en masse* and cleansed the wound thoroughly with warm water, all coagulum being carefully removed; and he always washed his hands thoroughly before operating, an unusual action in his day. As a result he was enabled to state that though he had never refused to operate in any case where a single person in consultation had deemed an operation advisable, he had operated in the infirmary in 35 cases promiscuously without a single death, without a case of secondary hæmorrhage, and only one of exfoliation. When Lister started on his epoch-making career the conditions of hospital surgery were such that no general improvement could have taken place over those found by Alanson prevailing in the infirmary. Lister clearly established by the enunciation and proof of the germ theory of disease the "how" of the connexion between dirt and disease in surgery, and thus principles which had been foreshadowed in vain by Alanson inevitably compelled general acceptance under Lister.

[1] Edward Alanson and His Times. By R. W. Murray, F.R.C.S. Liverpool: Samuel Hill and Sons. 1914. Pp. 26.

AMPUTATIONS IN WAR SURGERY.

THE conditions in war are so very different from those encountered in times of peace that the conclusions arrived at in the latter case are often found to be quite inapplicable to the former. The rules for amputation in ordinary civil practice have been based on an enormous amount of experience, and they have been received by all surgeons; but in war-time the conditions are utterly different, and civil surgeons unacquainted with war conditions must not attempt to dogmatise and to lay down rules for circumstances with which they are not acquainted. In the present issue of THE LANCET we publish an interesting paper by Lieutenant H. Fitzmaurice-Kelly on the methods of amputation which have been found advisable at the front. In place of the elaborate procedures which centuries of experience have shown to be best in civil practice, Mr. Fitzmaurice-Kelly tells us that the present war has shown that the simplest method of amputation proves sometimes the best. In fact, a return to the oldest method of amputation is advised, the simple circular method. The advantages claimed for this method are: that the absence of flaps allows the limb to be removed at the lowest possible point, thus minimising the shock; that the raw surface left is the smallest possible; and as no attempt is made to bring the edges together the drainage is perfectly free. The rapidity with which the operation can be done is an additional argument in its favour. There is the disadvantage that the stump so formed will need later some further operative treatment, but this can be carried out in favourable circumstances, when the patient has fully recovered from the shock of the injury and of the first operation, and when the conditions as to sepsis are all that can be desired. With much of what Mr. Fitzmaurice-Kelly says we must all agree, though too big a generalisation must not be made. It is never safe to assume that the curative measures which are definitely the best in one set of circumstances will necessarily be those most suitable for all times and seasons.

THE REACTION OF HERMAN AND PERUTZ IN SYPHILIS.

THE method of performing the Wassermann serum reaction for the diagnosis of syphilis was published in 1906, and is now employed all the world over. But it has the disadvantage of demanding experienced services for its performance. For this reason the search for a simple, yet trustworthy serum reaction in syphilis has not ceased, and the most promising of those hitherto described depend upon the precipitation of such substances as taurocholate or glycocholate of sodium, lecithin, or cholesterin, by the serum or cerebro-spinal fluid of syphilitic patients. One of the weak points in these reactions has always been their tendency to give positive results in non-syphilitic as well as in syphilitic cases, a tendency which appears to vary inversely with the skill of the experimenter. Bang and With[1] have recently made a careful study of the Herman and Perutz (1911) reaction, depending upon the precipitation of sodium glycocholate and cholesterin, which is, they say, the most specific and the most sensitive of these reactions for syphilitic infection. They note that it is not essential that the cholesterin solution should have been freshly prepared; the solution of sodium glycocholate, on the other hand, should be fresh or not more than a few days old, and should be made up with water that has been freed from carbonic acid gas. They find, too, that the use of 0·4 c.c. of serum with 0·4 c.c. of the reagent gives more trustworthy results than those obtained when only half these quantities are employed. They inactivated the serum by a preliminary heating to 55° C. for half an hour, and looked for the results after the mixed serum and reagent had been kept for 18 or 24 hours at the temperature of the laboratory. The later the readings are taken the greater is the number of the positive results obtained, and the less is the reaction specific for syphilis. Bang and With have been at pains to compare the results they obtained with this reaction and those furnished by Wassermann's test. Out of 110 patients with primary sores in whom Wassermann's reaction was still negative, 41 gave a positive Herman and Perutz reaction; it has often been pointed out before that the latter reaction appears the earlier of the two, and also lasts the longer when the patient is under antisyphilitic treatment. In secondary syphilis the two reactions appear with about equal frequency, and in many instances supplement each other's deficiencies. In tertiary syphilis, including tabes dorsalis and general paralysis of the insane, the advantage lies clearly with Wassermann's reaction; and so it does in the case of late congenital syphilis, of which Bang and With have seen 46 cases, 43 with a positive Wassermann, but only 16 with a positive Herman and Perutz reaction. One of the weak points about the latter reaction is the frequency with which it is positive in non-syphilitic patients. About 2 per cent. of people apparently free from syphilitic infection react to the precipitation test as if they were syphilitic.

[1] H. Bang and C. With: Nordiskt Medicinskt Arkiv, Stockholm, 1915, xlviii., Afd. II. Festskrift för J. G. Edgren.

AN AMERICAN SURGEON'S PRIMER OF THE WAR.

THE United States has given abundant material proof of sympathy and affection for us. But more than this: hosts of clear-sighted men and women in America are fighting the cause of the Allies with pen and tongue. Trying hard to make the best of a bad cause, Germany is flooding America with literature, but all in vain. The sentiment in the United States is overwhelmingly against her. One of the best counterblasts to this press campaign has been issued by the distinguished Philadelphia surgeon, Professor J. William White. In "A Primer of the War for Americans" he has put the issues squarely for democracy against autocracy, bureaucracy, and militarism. To ten questions answers are given partly from official documents, partly from his own reading. The pamphlet is full of strong meat, and contains one of the best statements we have read of the fundamental causes of the war. The chief blame is laid on the Kaiser and his entourage. "The war is a German-made war, having its source and inspiration in the writings and teachings of the Pan-Germanists; in the ambitions of an autocratic military caste, headed by a highly neurotic, unbalanced, and possibly mentally diseased overlord, with mediæval views of his relation to the country and to the world, and supported by a subservient corps of 'learned men,' the majority of whom are paid servants of the State." The interests of America and of the Allies coincide, and the conclusion of

the writer is: "We should at the very least strengthen the wavering, reassure the doubting, give new hope to the despairing by proclaiming to the world our absolute and unreserved belief in the right and justice of the cause of the Allies, and our determination to see to it, should the worst come to them, that they shall have our material support to our last dollar, our last bushel of corn, our last drop of blood." The pamphlet, which may be had from the Winston Publishing Company, Philadelphia, is an illuminating commentary on the intensity of the feeling which has been aroused for the Allies in the United States.

THE SALVATION ARMY IN INDIA.

THE recent announcement that the Emperor of Japan had made a substantial contribution to the funds of the Salvation Army reminds us that this body is not only concerned with evangelical and social reform work at home, but that it is responsible for extensive missionary operations in the Orient, not the least noteworthy of these being its medical mission in India. In this connexion the Salvation Army give notice that they are in need of the services of a medical man to take charge of one of their Indian hospitals. The engagement is for three years, with passage out and back and a monthly allowance.

THE SUBCUTANEOUS INJECTION OF OXYGEN.

IN the *American Journal of the Medical Sciences* for December Dr. John McCrae, of Montreal, has discussed the therapeutic value of the subcutaneous injection of oxygen, a procedure which appears to have been principally used in France. The method followed by him was as follows. A cylinder containing compressed oxygen is connected by rubber tubing about one centimetre in diameter with a hollow sterilised needle. The needle used for injecting antitoxin will do very well. The skin is painted with iodine at any desired spot, usually the upper part of the chest, but any part where the skin is lax will do equally well. The needle is placed under alcohol or sterile water, so that the rate of flow on regulating the valve of the cylinder may be observed. A rate just short of a continuous stream of bubbles answers best, although the rate does not appear to be of much importance. The needle is then pushed through the skin, and according to its depth the oxygen will be seen infiltrating in all directions or a lump gradually rises. The usual procedure is to raise a lump about half the size of a football in half to one minute. If the needle be withdrawn and the opening stopped with a piece of adhesive plaster absorption usually occurs quickly and the mass disappears in a few minutes, although for several hours the fingers can detect crepitation. With a stethoscope loud crackles may be heard for a couple of days. Thirty-three patients suffering from different diseases were treated. A striking result was obtained in the case of a man, aged 30 years, who appeared to be dying three hours after the resection of a large piece of bowel and new growth. The lungs were very œdematous and the respirations were 60 and shallow. He was given four large injections during three hours. Although no change was noticed for a considerable time in the respiratory rate he became more comfortable from the moment the gas was injected, and he recovered. In cardiac and renal disease the comfort obtained was usually notable. Eleven cases of pneumonia were treated, but the results were disappointing. The respiratory rate never fell more than 6 per minute and often remained unchanged, and the course of the disease appeared to be unaffected. However, the patient's comfort was at times increased and the cyanosis sometimes was lessened. Such a result might be predicted if the observation of Peabody that in pneumococcus bacteriæmia the oxygen-combining power of the blood falls with the progress of the disease be borne in mind. Subcutaneous injection is an easy method of administering oxygen without waste. When respiration is interfered with or in abeyance oxygen may thus be quickly given. Dr. McCrae considers the method a desirable addition to the armament of the operating room as a provision against the accidents of anæsthesia, the more so as the administration can be confided to a nurse without interfering with those who are employing other measures. He enumerates the following other conditions which have proved amenable to this method: (1) Œdema of the lungs or glottis and interference with respiration by disease of the upper respiratory tract; (2) marked dyspnœa with defective oxygenation, as in cardiac and renal disease; (3) asphyxia neonatorum; (4) syncope; and (5) electric shock.

GASTRIC BORBORYGMI.

THE annoying and persistently recurring rumbles that some people exhibit are generally supposed to be due to collections of air in the intestine. They are usually located by the patient on the left side about the level of the umbilicus. That the seat of these borborygmi is not in the intestine but in the stomach is the opinion of Dr. A. E. Barclay (*Medical Chronicle*, 1914, vol. xxviii., p. 164). His evidence has been gained from X rays; the subjects were all females. An atonic stomach appears to be the cause associated with the effects upon it which are exerted by the respiratory movements. When the stomach is atonic the greater curvature sags down to some inches below the umbilicus, the food falls down into the lower part, and the stomach walls above come into contact a little below the cardiac orifice. This arrangement blocks the air-containing portion above from that containing the food below. With inspiration the air-containing space elongates, the normal gastric contractions at this phase being absent, and some of the air is cut off by the collapsed stomach walls. On expiration the air is again free from pressure, and it then bubbles over the left kidney between the collapsed and upper sac walls; this gives the characteristic bubbling. The sounds can apparently be at once stopped by a little pressure on the lower abdomen.

THE SCHICK TEST IN DIPHTHERIA.

FURTHER attention has recently been directed in the *Boston Medical and Surgical Journal* to the possible practical use to which this test may be put in dealing with diphtheria epidemics. By means of the reaction to be immediately described it is claimed to be possible to find out those individuals who are susceptible and those who are not susceptible to diphtheria. The reaction depends upon the local irritant action of minute doses of diphtheria toxin when injected subcutaneously. If antitoxin in the patient is absent or present only in a small amount insufficient for protection, a positive reaction will appear

in 24 to 48 hours. It is characterised by a circumscribed area of redness which persists for seven to ten days, and on fading shows superficial scaling and a persistent brownish pigmentation. An outbreak of diphtheria occurred at an industrial school near New York in April and May, 1914. Six mild cases were found and in June six more. Cultures taken from all the well children in the first week of May showed that 90 out of 260 were carriers of diphtheria germs. The Schick test was employed and it was found that half of all the children were immune; most of the carriers, too, were immune. All the cases not immune were given 1000 units of antitoxin, and this was repeated in 30 days as it was found that 75 per cent. of these cases had again become positive, a proof that the immunisation does not last for very long. The result of the measures adopted was a progressive diminution in the number of carriers, and by the first week in August only three or four remained.

LEPER HOUSES AND MEDIÆVAL HOSPITALS.[1]

BY CHARLES A. MERCIER, M.D. LOND., F.R.C.P. LOND., F.R.C.S. ENG.,

LATE PHYSICIAN FOR MENTAL DISEASES, CHARING CROSS HOSPITAL.

A HOSPITAL is not necessarily for the reception of the sick. Even now we have the examples of Christ's Hospital, Greenwich Hospital, Chelsea Hospital, the Foundling Hospital, and others to remind us that a hospital, or as our ancestors called it, an hospital, is a place of entertainment, a place where hospitality is dispensed. The word is sometimes used in old documents as equivalent to an inn, and indeed the word hotel is but a modified form of hospital, and the hostler or ostler is an hospitaller. This introduction is necessary because in treating of early and mediæval hospitals it is impossible to restrict our inquiries exclusively to hospitals for the sick, for in early times there were few or none that were devoted exclusively to this purpose.

There is no record of any hospital in Pagan Rome, but no doubt some existed, for with the establishment of Christianity by Constantine many were founded, both at Constantinople and at Rome, and were on so great a scale that it is certain they were not the first. Heraclitus said that all things flow. If he had said that all things grow, he would have uttered a more fundamental truth. Nothing springs suddenly into existence, but all great things have small beginnings.

The first hospital of which we have any record was founded for lepers in the reign of Constantine, himself a leper, by one Zodicus, a wealthy noble of his court, and the example was soon followed by others—Eubolus, Statius, Polybius, Eugenius, and Olympia, all in the fourth century. The Hospital or Xenon of Zodicus had a varied history. In the reign of Constantius there was a famine in Constantinople, and the populace accused Zodicus of bringing the wrath of heaven upon the city by preserving so many people whom God had accursed by afflicting them with leprosy. Zodicus was thrown into prison, and the Emperor, hearing that he had a magnificent collection of jewels, ordered him to produce them, Zodicus agreed, and took the Imperial bandit to his leper house, where all the lepers, headed by the daughter of Constantius himself, appeared before him, each bearing a lighted candle. "Behold!" cried Zodicus, "my precious jewels!" Constantius was not impressed. On the contrary, he was so furious at the trick that he ordered Zodicus to be torn to pieces by wild mules, and the lepers, including his own daughter, to be thrown into the Bosphorus. However, he seems to have repented soon after, for in the following year he founded another leper house on the same spot. This was burnt in the riot provoked by the persecution of St. John Chrysostom by the Empress Eudoxia in 404. Rebuilt by Theodosius the Younger in 415, it was again burnt in the riot of Nica in 532. Justinian I. rebuilt it on a much larger scale in 540, his successor enlarged it in 577, and in 1116 the Emperor Alexius Comnenus increased it so that it would accommodate, it was said, 10,000 beds. His daughter, Anna Comnena, the celebrated blue stocking, gives a long description of it in the fifteenth book of her "Alexiad." "It is," she said, "a veritable city, where the unfortunate are nursed and cared for—wine flows in rivers; the blind are led by those who see, the old by the young, the legless by those who have legs, and those without arms by those who possess them; orphan children are suckled by mothers not their own; the sick are served by those who are well."

To return to the fourth century, it is said that under Theodosius the Great the number of hospitals was so great that one was attached to almost every church, and towards the end of this century St. Basil devoted his life and his fortune to the maintenance of a great leper hospital at his native town of Cæsarea. It was primarily a leper house, but included numerous annexes for travellers, monks, workmen, and the sick. St. Basil himself nursed the lepers and instructed the nurses in dressing their sores. When he died, St. Gregory Nazianzen preached a memorable funeral sermon exalting the work of Basil above the seven wonders of the world, and pleading with great eloquence the cause of the leper. It is notable that Newman in his life of Basil does not mention the leper house, and in his life of St. Gregory Nazianzen does not give the funeral oration. All that interested Newman was the mental struggles of the saints, and the squabble between them.

Justinian established xenodochia or nosocomia (hospitals), ptochia (poor-houses), orphanotropia (orphanages), brephotropia (foundling hospitals), and gerontocomia (almshouses), so that in his time charity was profuse and organised. His wife, the infamous Empress Theodora, founded a penitentiary for fallen women, and in her journey to the baths of Pythea she distributed liberal alms to the churches, monasteries, and hospitals of Bythynia.

In Moorish Spain and in Syria general hospitals for the sick were maintained by the Caliphs, and great schools of medicine grew up around them, giving to the world physicians whose names are imperishable—Mesué the elder and the younger, Rhazes, Avicenna, Haly-Abbas, Avenzoar, Averroes, Abdulcasis, and Maimonides, a succession of physicians who cannot be paralleled in Christendom from the ninth to the twelfth century.

In this country only two hospitals are known to have been founded before the Conquest, neither of them for lepers. The first leper house in France was founded at St. Ouen in 460 and the first in England by Lanfranc in 1087. Many leper houses were founded in this country in the thirteenth century, but very few after that time, and in France

[1] Abstract of the FitzPatrick lecture No. I. The full text of the two lectures will appear in the Glasgow Medical Journal.

none were founded after the fourteenth century, though further east Solyman the Magnificent founded a great leper house at Scutari in 1540, at a time when the European leper houses were being closed for lack of patients.

Leper houses were hospitals in the modern sense in so far that they were institutions for the reception of the sick, and in some leper houses there were nurses, but the leper houses of Christendom were rather combinations of the prison, the monastery, and the almshouse than hospitals in the modern sense. The chief object of the leper house was to serve as a prison, or if we prefer the term, a compulsory isolation hospital, for the seclusion of the lepers from the general population. This seems to have been the rule from very early times. Herodotus says that in his time in Persia if anyone is afflicted with leprosy he is driven from the town and forbidden to associate with other Persians; and Pausanias in 479 B.C. mentions a town of Elida named Leproon because of the lepers accumulated there, but neither Aretæus, who gave a minute and accurate description of leprosy in the first century A.D., nor Galen, who gave a detailed description in the second century, nor Oribasius, in the fourth century, say that the disease is contagious or speak of the segregation of lepers. The first mention of the compulsory isolation of lepers in Christendom is by Ætius in the sixth century, and Paulus Ægineta in the seventh speaks of it as an established practice in his time.

It is doubtful whether the seclusion of lepers from the general population was at first due to any apprehension of the contagiousness of the disease. It seems more likely that in early times the leper was separated because he was looked upon as accursed. The disease was regarded as a mark of the wrath of God, and the leper was driven from among men lest they also should share in the Divine displeasure. However this may be, it is certain that at a very early time the conviction of the contagiousness of the disease was firmly fixed in the general mind. A regulation of the great leper house of St. Julian at St. Albans provides that "no Brother is to go into the Bakehouse or Brewhouse but he that has charge of them, and he not to touch anything, because Persons under such a Distemper are not to handle what is for the common use of Men." The danger of contagion is explicitly stated in a writ of Edward IV., which opens with these words: "Whereas we have heard that Johanna Nightingale is a leper and is commonly holding intercourse with the people of the aforesaid county, and mingles with them both in public and private places, and refuses to retire to a solitary place, to the grievous injury, and on account of the contagion of the aforesaid disease, the manifest peril of the aforesaid inhabitants," &c.

At Arles, Metz, Marseilles, Berwick-on-Tweed, London, and other places, inspections were made from time to time for the discovery of lepers, and regulations were made to prevent them from entering the towns. In Scotland all men were forbidden to harbour lepers, and lepers were forbidden to enter any town except on Sundays, Wednesdays, and Fridays, from 10 to 2, and not then if there was a market on those days; and in 1349 the Dauphin, subsequently Louis XI., issued a commission to the whole of France to discover lepers and forbid them to mingle with others. If lepers refused to go into retreat they were very summarily dealt with. At Metz and some other places in France they were burnt alive.

No doubt many people suffering from chronic skin diseases of various kinds were sent to leper houses, and both Bernardus de Gordonio and John of Gaddesden complain that lepers are very injudiciously adjudged, but still the recorded regulations show that in many places extreme care was exercised that no one should be considered leprous who was not indeed a leper. In Lorraine, in a doubtful case, a suspect was subjected to 22 successive investigations, and if still doubtful was sent to a leper house, but was there visited by physicians, and not until he was declared leprous by them was he *cum multis verbis bonis et consolatoriis sequestrandum a populo.* In other places the suspect was kept under observation for a year. All the ancient and mediæval authors give a very clear description of leprosy, distinguishing the four different kinds—elephantine, alopecic, ophidian, and leontine—and give an immense number of diagnostic signs, up to 75 in some authors. Bartholemy Glanville's description is as picturesque as any. As translated out of Latin by John Trevisa he describes lepers as having "redde Whelkes and Pymples in the face (*cf.* Bardolph's nose, covered with Knobs and Whelks and Bubukles and Flames of Fire) out of whome oftenne runne Blood and Matter; in such the nose swellen and ben grete, the vertue of Smellynge fayleth and the Brethe stynkyth ryght fowle," &c.

In Rymer's "Fœdera" appears a *Medicorum Regis supra morbo leprae certificatio* which is addressed "To the most excellent and serene Prince and Lord in Christ, Edward, by the Grace of God King of England and France and Lord of Ireland." It is dated 1468, and refers therefore to Edward IV., and sets forth that in obedience to a writ addressed to the Sheriff of Essex, "We, William Hattecliffe, Roger Marshall and Dominus de Serego, your physicians, and sworn to watch over the health of your person, send due Reverence with Humility and Worship." The three physicians then recite the writ, and declare how they have examined the suspect for the 25 signs of general leprosy and for upwards of 50 of the distinctive signs of the four varieties, and find that she is utterly free and untainted. It appears that in this instance, at any rate, more care was exercised in the reign of Edward IV. in the examination of a leper than is now required in the examination of a lunatic.

When the verdict was finally given that the suspect was indeed leprous he was subjected to a gruesome ceremony adapted from that of taking the veil. He was carried to the church on a bier and covered with a pall, the mass for the dead was said over him, he was then taken to the churchyard and placed beside an open grave, where the priest scattered dust three times upon his head, saying, "Die to the world: be born again to God." Then after many admonitions and further prayers he was conducted to his solitary cabin, or to the leper house, and became civilly dead. His will was administered, his wife was free to marry again, he was incapable of holding property, he could not even be a guardian in socage, whatever that may be, and thenceforth he lived an outcast, subsisting on the alms of the charitable. If, however, he was fortunate enough to gain entrance to one of the wealthy leper houses his lot was a fairly comfortable one as far as material comforts go, but he had to pay for this better treatment by a very severe course of religious exercises.

It is evident that in respect of secluding him from the healthy population, it would avail little to

send a leper to a leper house unless measures were taken to keep him there, and we find accordingly that punishment of greater or less severity awaited the leper who made his escape. At St. Julian's Hospital, where lepers lived in considerable luxury, it was considered sufficient punishment to expel them from the house if they lay out all night. The same offence was visited at St. Magdalen's Hospital, Exeter, by the stocks and bread and water for one day. At Greenside in Scotland the same offence was a hanging matter, and lest any inmate of the leper house should forget the penalty and err by inadvertence, the authorities thoughtfully erected a gibbet before the gate to remind him. At other places the offence was regarded still more seriously. At Schenalle in 1321 two lepers who escaped from the leper house were first flogged and then burnt alive.

Leprosy must have been extremely prevalent in the Middle Ages. Mezeray says that in the twelfth century there was neither town nor burgh in France that was not obliged to provide a hospital for lepers. Muratori says that in Italy there was scarcely a city that had not a place set apart for lepers. Our Anglo-Saxon ancestors called it *seo mycle ail*—the great disease. In 1226 it was reckoned that there were 2000 leper houses in France, and this is probably correct, for there were 43 in Paris alone, 219 in Normandy, and 59 in Lorraine. In England it seems to have been less prevalent, for in the twelfth century there were but six in London, five at Lyme Regis, and 20 in all Norfolk, and we do not know of more than about 220 in England and Scotland. Other signs of its prevalence are found in the number of distinguished persons, reigning sovereigns and others, who are known to have suffered from it, and in the provision of separate leper houses for separate classes. Thus in Dauphigné there was one leper house for the nobles, another for the commons, and a third for the ladies of the court. The hospital at Walsyngham was for lepers who were sick and of good family, and that of St. Laurence of Canterbury was for the clergy.

Few leper houses were founded in England after the thirteenth century, and in the fourteenth century the English leper houses were being closed for lack of patients, and their funds diverted to other uses. A few isolated cases are recorded in the sixteenth century, in which the disease altogether disappeared in this country. In France it was reported in 1696 that leprosy had altogether disappeared, and though it lingered in the Hebrides till the last century and is still known in Norway and Constantinople, yet in the great area of Europe it has entirely disappeared.

Why leprosy should thus have disappeared from Europe is a curious matter for speculation. It is certain that it was not exterminated by the isolation of lepers, for in the first place it is doubtful whether leprosy is contagious at all, and in the second it is certain that the measures of isolation taken by our forefathers would not have suppressed it if it were contagious. The disease is of very slow progress, and the leper was never isolated until his leprosy was well advanced. There must always have been, therefore, many lepers in the early stages of the disease going about among the general population, and if leprosy is contagious at all it is not to be supposed that it is not contagious in the early stage, in which the contagion of most contagious diseases is virulent. Moreover, if it was the isolation that eventually put a stop to the disease it is difficult to see why it should take 1200 years to do so. Sir Jonathan Hutchinson was of opinion that leprosy is due to eating fish that is decomposing or insufficiently cured, and that it declined with the abolition of fast days and of the practice of eating salt fish that occurred at the Reformation. In fact, however, leprosy was already practically extinct in this country before the Reformation, and it has disappeared as completely from Catholic as from Protestant countries. It is sometimes asserted that leprosy disappeared in consequence of the amelioration of manners and the adoption of greater cleanliness and better sanitation, but I know of no evidence that the customs of our ancestors in respect of cleanliness and sanitation were any better in the fifteenth and sixteenth centuries than in the seventh or the twelfth, nor that any improvement in this respect was earlier in this country than in France. In view of the difficulty of communicating the disease, even by inoculation, the surmise has crossed my mind that the bacillus may have been injected by some biting insect that is now become extinct, and may perhaps have undergone in the body of the insect some developmental change which enabled it to invade the human tissues with greater ease. It may be so, but there is no evidence that it is so, and the surmise remains a mere surmise. There is, however, another hypothesis which has a good deal of corroboration, indirect, it is true, but still of some weight.

The clinical descriptions of disease that we find in ancient and mediæval writers on medicine were so clear and so faithful that we have no difficulty in recognising in them the diseases that are known to us now. The most prevalent, the most widely diffused, and, in its later stages, the most easily recognised and most deadly disease that now afflicts European peoples, is undoubtedly pulmonary consumption; and it is remarkable that although there are in the old writers descriptions of disease that we may with some hesitation identify with phthisis, yet there is nothing in the writings of ancient and mediæval physicians to make us believe that phthisis was in their time at all comparable in prevalence with its prevalence now. I venture to put forward the conjecture that the bacillus of leprosy is changed into the bacillus of tubercle, and that tuberculosis has thus superseded leprosy as the chief scourge of mankind in modern Europe. In support of this conjecture I adduce the following facts. First, leprosy, from being the chief scourge of the European population, has spontaneously disappeared. Second, it seems probable that since the disappearance of leprosy tuberculosis has greatly increased. It is certainly as common now as leprosy used to be. Third, the bacillus of leprosy is very closely allied to the bacillus of tuberculosis, so that unless we are to repudiate the doctrine of evolution we must believe either that they are both descended from a common parent or that one of these is the parent of the other. Of the first alternative we have no evidence. There is no known disease that in the least resembles the pair, tuberculosis and leprosy; and these two are closely alike. Both are very chronic diseases; both are longer in duration than any other bacillary disease. Both are favoured by hereditary predisposition. Both have been held to be hereditary, and they are the only bacillary diseases in which heredity has been alleged to have any influence. Lupus is a bacillary disease of the skin of the face produced by a bacillus that is closely allied to tubercle—that is if you like, a

variation of the tubercular bacillus—a disease that closely resembles leprosy, that attacks the same part in much the same way, and produces with equal chronicity a similar disfigurement. In lupus we have, as I take it, the halfway house between leprosy and tubercle. We see the transformation actually in progress. That bacilli do change in virulence and in other qualities is beyond question. It is a commonplace. The whole practice of vaccination is founded upon it.

On this accumulation of evidence I found the conjecture that leprosy has after all not disappeared from Europe, or if it has it was only to reappear in the form of tuberculosis. In mediæval times there was no city, no burgh, without its leper house. At this day it is a pious aspiration that every city and every burgh should have its sanatorium for consumption. It would be curious if it were established that, unknown to ourselves, the great scourge from which we suffer is the lineal descendant of that from which they suffered, and we, their lineal descendants, treat it in the same way, but up to the present less thoroughly.

CIVIL MEDICAL PRACTICE AND THE WAR:

THE SCOTTISH MEDICAL SERVICE EMERGENCY COMMITTEE.

AT a meeting of practitioners in Glasgow and district on Dec. 16th last, presided over by Dr. John Barlow, President of the Royal Faculty of Physicians and Surgeons of Glasgow, Dr. Norman Walker delivered an address on the work of the Scottish Medical Service Emergency Committee. This committee, he said, which was constituted at the outbreak of the war, and consists of the heads of the Scottish medical schools with certain representative practitioners, had issued a memorandum,[1] the points of which he discussed and explained.

The first point was that the fee offered to a locum tenent taking the work of a practitioner engaged in military duty should not exceed 5 guineas a week. This recommendation had been very generally accepted.

The second suggestion, that retired practitioners willing to enable their professional brethren to serve their country should send their names to the Emergency Committee, obtained a good many names, but when they came to definite proposals it was not so easy for a practitioner in the neighbourhood of 60 to face a hard country or colliery practice. He appreciated the difficulties, and did not utter a word of criticism. Indeed, some men had heroically undertaken work which would tax their strength. But he thought there was room for those retired men who were unfitted for the whole work of a practice. There were many districts where a large part of the work was done in the consulting room, and this work could very well be done by such men, while the visiting was done by the younger men who had not been summoned to military duty. This called for organisation.

The third suggestion was addressed to the educational authorities, and was to the effect that school medical officers should be permitted to give at least part of their time to general work. Very little had been done in this direction, and something more might be done. By a little harder work and by a little organisation two men might do the work of three. It was the local educational bodies from whom the proposals must come.

The fourth suggestion was that the visiting staffs of large hospitals, infirmaries, and asylums should consent to a reduction of the numbers of their medical residents and clinical assistants, and should themselves undertake a proportion of the work usually assigned to these junior officers. This had been faithfully carried out. All hospitals had cut down their resident staffs. One very distinguished professor of medicine was acting as his own house physician, and a well-known professor of anatomy for three months acted as house surgeon in the hospital attached to the school in which he was professor.

The fifth point was that in the larger towns young practitioners whose practices were not yet extensive should in pairs make an arrangement whereby one undertook the whole town practice for (say) two months, while the other acted temporarily in the country for a third colleague absent on duty; and so alternatively for successive periods. So far as he knew, no one had taken the advice in this direction. It was a method which he hoped young men would seriously consider. Lord Kitchener had advised men whose work is necessary for the successful prosecution of the war that they would be rendering just as good service to their country by continuing their work as by enlisting in the army. The men driving rivets on the Clyde to-day were in this position, and so was the young doctor who, by doing double work, enabled another to go on active service.

He admired the opportunity women had of demonstrating their fitness. He could not think that the front, or very near it, was the place for them; but in filling the places of the men who had gone to the war they had the chance of showing in spheres of work not as a rule easily open to them their real merit. He could not say that his earlier offers of women locum tenents were received with enthusiasm, but he could say of those who were accepted that once the novelty wore off the value of their work was appreciated, and he had before him now a request for a locum tenent—a lady preferred. No woman doctor who had the woman doctor's cause at heart had any business to remain idle just now.

It was a pretty safe prophecy that in the next few months with the officering of the newly enlisted men the period of stress would be greater, and as the new graduates almost all immediately joined the army, the remaining profession and the public would have to depend largely on organisation to cover the work. The new graduates should send in their names to the War Office at once, but they would not immediately receive commissions. He asked them not to idle away that waiting time, but to give it to the civil community.

The most complete example of organisation was found in Dundee, where an exceptionally large proportion of doctors were serving in some capacity with the colours. A very elaborate system had been designed, and was working with remarkable smoothness. There was not really much difficulty in the large towns, but in the real country districts matters were much more difficult. No one who was busy in his own practice could

[1] See THE LANCET, August 22nd, 1914, p. 530.

adequately do duty for an absent colleague whose centre was ten miles away. Patients were bound to be neglected, and this must not occur. Locum-tenents must be found, and he made a special appeal to those who had available colleagues to exhaust every effort to make arrangements with these colleagues and leave locum-tenents for the places where they were absolutely necessary.

Dr. Walker then referred to the physicians and surgeons of the large hospitals, who were doing admirable work in caring for the wounded and sick in the military general hospitals, and at the same time attending to their ordinary hospital work, teaching, and carrying on their private practice. It would be a great thing if there were some similar arrangement in connexion with general practitioners. A great deal of consideration from the public was required. Military duties must come first, but there were a good many hours in a day which, if a man were stationed in his own district, he could occupy in attending to the health of the civil population, his former charge. It had been represented to the authorities that by a sort of "general post" men could get back to their own homes, and, while still discharging military duty, do at least some of their own work as well. The Director-General had given these representations most sympathetic consideration, and an Order had been issued which would very considerably ease the strain in many instances. (This Order is published on p. 49.)

When men joined the Territorials they never for a moment contemplated the possibility of having to go, say, to India for a year or 18 months. And yet till this week that was more than a possibility in many cases. But thanks to this Order of the Director-General it would be not only possible but easy for arrangements to be made to avoid this. He did not counsel any shirking of work, but he did question the wisdom of a medical man over 50, with heavy responsibilities at home, both to his own family and to the patients who loved and trusted him, who from a mistaken sense of duty exposed himself to the risk of such a serious change. As to going to the front, anyone who had heard from an eye-witness of the state of things in Belgium had great difficulty in advising one who has the chance of going there to make other arrangements. Yet even for that the middle-aged must admit that, always excepting expert surgeons, the younger men were more useful than they would be likely to be. The general spirit among the profession reflected that of the community, and all were anxious that those who had answered the call of duty should not suffer. For instance, nearly every one had refused to accept the transfer of insured persons on an absent colleague's list, and he regretted that he had to use the qualifying word "nearly."

Referring to unbusinesslike habits among medical men Dr. Walker had been astonished to find in how many cases no definite arrangements at all had been made by those who had joined the army. Men went off at 24 hours' notice. They asked a neighbour over the telephone to do their work for them, and he said, "Certainly." It was all right in August; there was not much to do, the roads were dry and the days were long, but it now became a different matter. There was more work; the roads were heavier and the days not long enough. The man who was trying to do double work in this way was late for dinner every day; nearly twice as often out of bed; his tyre and petrol bills were going up; his chauffeur's temper and usual cheerfulness gave way, but he did not like to open the subject in a commercial way with his colleague, who was away serving his country, though perhaps only 30 miles from home The man who was away was in such different surroundings that he seemed to forget all about the sordid details of practice at home. A feeling of injustice developed in the mind of the man on whom the work fell, and it did not get less as the work got harder. This state of matters must not go on. It was not fair to either party, and it was laying up certain trouble for the future. In most cases it was quite easy to arrive at an equitable arrangement. It was not possible to lay down conditions universally applicable, but the committee had under consideration the advisability of issuing two or three model plans, one of which would generally be found suitable. The general principle was for the man who was away to sum up his new conditions. On one side he should place his pay and allowances and the diminution in his expenses, especially car expenses. On the other, his income from appointments and practice, all of which was now being earned by his substitute. As an illustration in round figures, the case might be taken of someone whose pay amounted to £400; car expenses, £200; total, £600. On the other side might be put £800 as the gross receipts from practice. If that amount were divided equally the man away had a clear £800. The man at home had a gross addition of £400 a year to his income—say £300 net—to cover a very great deal of additional work. In some cases on which Dr. Walker's advice had been asked the car expense element had been forgotten altogether by both parties. The Scottish Medical Emergency Committee had indicated its readiness to help in the adjustment of such cases, and he could say from experience that the intervention of a neutral third party greatly facilitated amicable settlement.

In conclusion, Dr. Walker was convinced that the difficulties would be greater in the next few months than they had been in the past; that they would be difficult to solve, but that they could be solved by goodwill and coöperation.

THE BLEACHING OF FLOUR.

THE public criterion of quality in respect of foods and beverages shows some interesting anomalies. Appreciation is often based, for example, on appearance, on how things look, and it is in this direction that conclusions often and obviously become illogical. In some instances the article demanded must be spotlessly white, while in others if naturally white they must be artificially coloured. The white loaf is a popular fancy, but white milk is suspected, and yet natural flour may be of a rich golden colour, while rich milk may have only a shade of brownish colour which is supposed to connote cream. The result is that in the one case flour is often deprived of its colour by a process of chemical bleaching, and that in the other an artificial colouring (generally annatto) is added. Natural colour is objected to on the one hand, and on the other an artificial addition is demanded. It may be urged that both expedients are justifiable

inasmuch as they meet a popular fancy, and that this counts in the enjoyment and even digestibility of the foods. If artificial means are employed to adjust the appearance of foods to a popular standard, the proceeding can clearly only be allowed when it has been proved beyond all doubt that the products are not dietetically impaired or that they do not masquerade as something which they are not.

Apparently we still await a definite decision from our authorities as to the desirability of permitting flour to be bleached by chemical processes. There has been an accumulation of evidence on the point, and on the one hand we are told that such treatment spoils the dietetic qualities of the flour in certain directions, and on the other that after all the chemical process is merely doing in a few hours what exposure to air accomplishes in as many months or possibly years. In the present crisis it is not improbable that a change of policy may take place in regard to the preparation of food supplies for the market owing to many economic reasons, and it occurred to us to submit to examination one of our foremost necessary commodities—wheat flour. It is conceivable that the present time may afford an opportunity to place on the market inferior qualities of flour rendered "superior" by artificial treatment. In other words, the question arises as to whether the practice of bleaching flour is more prevalent at the moment than hitherto owing to the threatened interference with supplies attendant upon the operations of the great war.

A week ago, accordingly, we secured samples of flour representing the article supplied to the public through the ordinary local distributing channels. The samples secured came from houses situated in the following districts: City of Westminster (4 samples), Kennington (1 sample), Wood Green (1 sample), Ruislip (1 sample), Lambeth (1 sample), Finsbury Park (1 sample), Manor Park, Ilford (1 sample), Lewisham (1 sample), Bromley, Kent (1 sample). These were carefully compared in THE LANCET Laboratory with a standard unbleached flour. A definite weight of the flour was extracted with petroleum ether and shaken up during 24 hours, at the end of which time the whole was passed through a filter and the filtrate made up to a definite volume and compared with the standard unbleached flour. The petroleum ether extracts the natural yellow colouring matter of flour, which is apparently identical with carrotene. In proportion to the amount of bleaching that has been done, so does the petroleum ether dissolve diminishing quantities of natural colour. Calling the yield of colour from natural unbleached flour in a given volume of petroleum ether 100, we get some idea of the extent of bleaching to which flours have been submitted, by measuring their colour against this standard when extracted with petroleum ether in exactly the same way.

The following were the results obtained, and side by side with these we give the result of the test applied for the presence of nitrous acid. It will be seen that the relative statements recorded in regard to the intensity of this reaction coincide with the variations in the amount of colour extracted by petroleum ether. Thus, in the cases where petroleum ether showed a maximum of yellow colour (equal, that is, to the standard for unbleached flour) the reaction for nitrous acid was inappreciable. Conversely, when there was a clear deficiency of natural yellow colour the nitrous acid reaction was well marked.

Table Demonstrating the Bleaching of Flour by Nitrous Acid.

Sample.	Colour value. Maximum = 100.	Nitrous acid reaction.	Remarks.
Standard unbleached ...	100	Inappreciable.	No evidence of bleaching.
Westminster (1)	100	,,	,,
,, (2)	75	Well marked.	A partly bleached flour.
,, (3)	60	,,	A strongly bleached flour.
,, (4)	100	Inappreciable.	No evidence of bleaching.
Kennington	75	Decided.	A partly bleached flour.
Wood Green	100	Inappreciable.	No evidence of bleaching.
Ruislip	75	Decided.	A partly bleached flour.
Lambeth	100	Inappreciable.	No evidence of bleaching.
Finsbury Park	100	Slight reaction.	Probably unbleached.
Manor Park, Ilford ...	60	Well-marked.	A partly bleached flour.
Lewisham	45	,,	,,
Bromley, Kent	90	Marked.	Slightly bleached.

Of the 12 samples of flour examined there was no evidence in five cases (41·6 per cent.) that bleaching had been done. The remaining seven cases (58·4 per cent.) showed decided bleaching to the extent here and there of nearly half the natural colouring matter.

Leaving health considerations for a moment there seems to be little doubt that since bleaching is capable of improving the colour of flour the commercial value of low-grade flour is probably raised by the process. The miller thus can convert for his own purpose cheap, dark-coloured flour into a white article which, because it is white, commands a higher price. If there is any justification for the process at all it would surely be more legitimately done if there were no question of enhanced profits attached to it, for it can hardly be contended that the real dietetic quality of the flour is improved. It is merely a matter of appearance which is aimed at, and such an alteration so often proves a trap to the unwary public.

As regards the health aspect of the matter there seems to be a difference of opinion. On the one hand, it is contended that nitrous acid has a bad tendency on the nutrient value of flour, putting out of action the enzymes and rendering certain of the constituents invalid, while nitrites have a known and lowering physiological action. On the other hand, feeding experiments are recorded which appear to show that the administration of bleached flour shows no unfavourable effect upon the health at all, and that even extracts of over-bleached flour produced no marked toxic action when introduced into the stomach. This part of the subject is well summarised in a report made by Dr. J. M. Hamill to the Local Government Board in 1911 (Cd. 5613). The practice has been forbidden in the United States, in Australia, and in Switzerland. On the whole we think that the conclusions given in the Local Government Board report referred to

are well founded. It would be very unsafe to assert that for every individual the consumption of flour highly bleached by the aid of nitrous acid could be guaranteed to be free from risk, especially when we know that this process has an inhibitory effect on digestive processes and enzymes. We may well entertain a suspicion whether as a rule natural food products can invariably be improved, with advantage to the dietetic machinery, by chemical treatment. Our inquiry shows that the practice is persisted in and that apparently it is countenanced in spite of official reports and the prohibitory legislation in force in other countries.

GAMELLE AND RATIONS.

(FROM A CORRESPONDENT.)

THERE can be no doubt that our soldiers are now much better fed than in any previous campaign, though an old writer, speaking of an English army in France and the Low Countries some 200 years ago, declares that the English, though capital staunch fighters, are late risers and too hearty eaters. This last idea was perhaps partly in Hogarth's mind in 1755 when he drew his famous "The Gates of Calais, or the Roast Beef of Old England." In this caricature, as all will remember, a large sirloin is being carried into the British lines to the surprise, amongst others, of a French soldier, very lean and starved, who spills his bowl of thin soup in the foreground. It is recorded traditionally that Hogarth by this cartoon contributed to the improvement of the French soldier's condition. The old government of France, according to a commentator on Hogarth, was in certain senses extremely attentive to its military establishment, while it paid but comparatively little regard to the comforts and support of its soldiery, "whose lean appearance" bespoke a meagre dietary.

Up to the time of the Revolution the French army lived from hand to mouth as became well-dressed brigands. With the advent of Napoleon it began to march upon its stomach. It was well fed. The great Emperor himself believed that to eat legs of mutton would beget him a male heir. He may, therefore, as a hearty eater, be said to have contributed not a little to the diet of his soldiers. He set afloat the idea that the well fed are the best men in battle. Much curious information as to how the Parisians in arms at the frontier supported themselves in war-time of old is contained in Erckmann-Chatrian's "Histoire d'un Paysan," a work of enormous length, which, none the less, is the best possible prolegomenon to the border campaign of to-day.

The French army remains at present a mystery. It is excessively enduring and gallant, but we have a shrewd suspicion that it is still attached to soup and to the meat stewed in soup. Our many French informants are always reticent on the subject of their food. We are at liberty, therefore, to suppose that the *gamelle*, in a conservative country, is still the vogue. Now, soup is no sufficing support to a soldier. The *gamelle* is traditional. "Le bon vieux Bouillet," in whom Matthew Arnold and many others have delighted, tells us—we refer to the volume of his dictionary devoted to science, letters, and arts in 1870—that the *gamelle* is a wooden or tin bowl into which the rations of soldiers are put. Eight men are fed out of the same *gamelle*. Portions of meat are divided and placed upon the soup (*sur la soupe*), and each soldier takes what is before him. He stands up, spoon in hand, and the corporal is the first to dip. Similar cases of dipping are recorded in scripture. The sons of Eli were unfair dippers, and this was remembered against them.

It was a famous Frenchman who gave a preliminary lift to our own military cuisine in the Crimean campaign. The celebrated chef, Alexis Soyer, went to Scutari in 1855, just 60 years ago, and wrote the "Culinary Campaign." He refused to accept anything but the military rations to work upon. He soon revolutionised the whole system. He found the camp cooks at Scutari and in other places tying the joints intended for boiling so tightly that the exterior was cooked while the inside remained raw. He found cooking going on in huge copper cauldrons so dark that it was not possible to see whether the tinning was intact—whether the water was not contaminated by verdigris. He found them marking their rations, "lest they should be confounded in the kettle," by attaching to them pieces of red cloth, a string of buttons, knives, forks, scissors, pairs of snuffers. He found them throwing away the fat from the coppers, three inches thick, for they did not know that they were thus destroying "a little sea" of excellent soup. He found them cooking sometimes with smoke, dust, and steam intermixed, instead of fire, and yet consuming "a fabulous quantity of unnecessary fuel." He changed everything as if by magic, introduced admirable camp-stoves, a cooking-wagon, a new tea-pot, and so forth. Officers sent for his soup. It may be truly said that in the Crimean campaign the English learnt cookery from the French. The hygiene of war greatly depends on good cookery, and Soyer was ranked with Florence Nightingale, in a humorous testimonial of the period, as one of the chief heroes of the Crimean campaign.

We wonder what the Germans are doing, for no nation places food higher. Tacitus says of the remote ancestors of the Germans that their food consists of wild fruit, fresh game, and curdled milk. They satisfy their hunger without elaborate preparation. The dwellers by the Rhine buy wine, but a liquor made out of barley or grain is the national drink. That Germany still rejoices in beer, raw ham, raw herrings, and a number of other savoury simplicities is proof that the cuisine in the Fatherland remains rather in the Tacitean epoch, though the enmity of war does not demand detraction from the excellent German cooking. The Anglo-Saxons developed an ample and elaborate cookery, but this by the learned is attributed to Roman influences. The *Wurst* and the manifold quaint farinaceous dishes of Rhenane Germany, which are akin to polenta, are probably Roman in origin. Monotony is the danger of the military cuisine. The Canadians, for instance, are fed incessantly on a kind of stew called by them "Mulligan," in allusion to that primitive archaic mess known as Irish stew. There can be too much "Mulligan"—our soldiers are feeling that on Salisbury Plain—and we feel sure that authorities will recognise in time that sameness of diet leads to staleness even among the healthiest of men.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Staff-Surgeon John Verdon has been allowed to withdraw from His Majesty's Naval Service with a gratuity (dated Dec. 25th, 1914); and Surgeon Archibald Louis Robinson has been placed on the Retired List (dated Dec. 9th, 1914).

The undermentioned have been granted temporary commissions as Surgeons in His Majesty's Fleet: Bernard William Dakers, Thomas Evan Francis, and Thomas Declan Power. Dated Dec. 23rd, 1914: George Cecil Mort, Noel Nathaniel Wade, and Norman Clifton Carver. Dated Dec. 24th, 1914: James Stanley Jobson.

Edward Stanley Mellor has been appointed Surgeon for temporary service in His Majesty's Fleet (dated Dec. 24th, 1914).

The following appointments have been notified:—Fleet-Surgeon: H. B. Hall to the *Laurentic*, vice Bradley, and J. Bradley (retired) to the *Challenger*. Staff-Surgeon: T. A. Smyth to the *Vivid*, additional, for Trevol Infectious Sick Quarters. Temporary Surgeons: B. H. Pain and H. Wilks to the *Pembroke*, for R.N. Air Service; H. C. Nixon to the *Ganges*, for Shotley; A. G. Sworn and P. B. Kelly to the *Pembroke III.*, for R.N. Air Service; G. B. Moore, additional, T. E. Francis, T. D. Power, and A. M. Grey, all to the *Victory*, for Haslar Hospital; S. S. Beare to the *Vivid*, for Plymouth Hospital; and B. W. Dakers to the *Pembroke*, additional, for disposal.

ROYAL NAVAL RESERVE.

The undermentioned have been granted commissions as Temporary Surgeon in His Majesty's Fleet:—Andrew Moir Gray and Stanley Samuel Beare.

The following appointments have been notified:—Surgeons: G. J. Carr to the *Imperieuse*, and F. St. B. Wickham to the *Vivid*, for Plymouth Hospital.

The undermentioned have been entered as Surgeon-probationers in the Royal Naval Volunteer Reserve:—J. Fairebrother, C. Pearson, T. H. R. McKiernan, C. D. Newman, H. D. McIlroy, D. L. Baxter, J. S. Webster, N. S. Hewitt, H. S. Lucraft, and C. Suffern.

ROYAL ARMY MEDICAL CORPS.

Captain J. C. McCarroll resigns his commission on account of ill-health.

The undermentioned Lieutenants are confirmed in their rank: J. P. Huban, J. C. A. Dowse, R. E. Grandy, G. L. Trower, O. H. Mavor, S. K. Young, F. G. Flood, W. A. N. Fox, R. R. G. Atkins, G. S. McConkey, F. M. Taylor, C. L. Gaussen, J. Davidson, H. R. Friedlander, E. Catford, R. P. Ballard, A. L. Robb, W. H. Shephard, H. Smith, C. J. Rogerson, A. F. I. Patterson, W. A. MacLennan, G. F. Clifton, E. F. Guy, T. W. Martin, R. C. Ozanne, J. McKercher, C. Grant, H. A. Fawcett, N. Cameron, J. R. Caldwell, A. D. Child, H. Smith, J. E. Black, G. T. Mullally, W. A. Elliott, N. L. Lochrane, H. B. Sherlock, J. Le M. Kneebone, T. M. Miller, M. Avent, R. A. Stewart, F. A. Bearn, W. S. Haydock, J. B. Minch, O. J. O'B. O'Hanlon, C. Jacobs, W. W. Shorten, J. Cowan, J. A. Ryle, K. L. O'Sullivan, J. F. Hill, S. D. Robertson, R. H. Hodges, T. K. Boney, C. H. G. Penny, J. S. Cocks, H. C. Storrie, T. G. Shand, E. C. W. Starling, P. Thornton, J. P. Litt, J. Paulley, G. L. Jones, W. H. Cornelius, F. Sykes, S. A. Lane, L. H. W. Williams, J. Macallan, K. W. Lewis, J. W. McNee, B. Grellier, F. R. Kerr, F. V. Bevan Brown, R. F. Fagan, W. C. B. Meyer, B. Goldsmith, T. C. Kidner, C. W. Treherne, J. R. McCurdie, D. C. Barron, R. G. Bannerman, E. W. Williams, K. D. Murchison, E. R. Lovell, S. W. M. Jones, E. M. Cowell, P. McDonnell, K. Biggs, C. de W. Gibb, H. G. Crawford, E. S. Walls, A. M. Thomson, M. W. Paterson, J. H. Magoveny, J. C. Young, C. J. B. Way, R. Stewart, C. N. Gover, A. A. Fyffe, A. A. Atkinson, J. A. W. Ebden, S. Wickenden, J. C. A. McCalden, A. B. Mitchell, D. C. L. Vey, S. W. Rintoul, F. S. Gillespie, R. D. D. Brownson, H. W. Evans, J. W. Craw, J. H. Beverland, W. W. MacNaught, D. S. Badenoch, B. Shires, G. A. Hodgson, B. M. Tuke, A. P. Smith, J. E. Foley, W. B. Alcock, R. G. Martyn, C. L. Balkwill, G. V. Stockdale, R. A. Austin, H. G. Trayer, W. R. Blore, A. L. Shearword, G. N. Smyth, R. E. Bell, A. Wilson, W. C. Fleischmann, J. C. Spence, W. J. S. Ingram, R. P. A. Kirkland, G. D. Read, and F. J. H. T. Frere.

The undermentioned to be temporary Lieutenants:—Dated August 11th, 1914: Henry Moore. Dated Dec. 6th, 1914: Henry Heathcote White. Dated Dec. 7th, 1914: James Morgan Barkley, Lewis Augustus Walker, Ernest Philip Chennells, Reginald Sherman, Charles Colgate Holman, Frederick Paine, Vynne Borland, Archibald Louis George, John McAdam Hill, John Cunningham McConaghey, Joseph Sandys English, James Reston Gardiner Garbutt, Norman Booth, Frank Anderson Murray, Sidney James Ormond, Roderick Alan Campbell, John Joseph Johnson, John Nairn Dobbie, Sydney Guy Billington, Montgomery Du Bois Ferguson, William Forbes Dunlop, Frederick Robert Dougan, Ignatius Alphonsus Dowling, Samuel Campbell, and John Corfield Pitter Bayley. Dated Dec. 8th, 1914: Edwin Charles Allan Smith, John William Cormack Gunn, George William Armstrong, Henry Thwaites, Leonard Douglas Saunders, Stuart Murray, James Craig, Ernest Dixon Wortley, Horace Ernest Humphrey Tracy, Thomas Duncan, and John Lumb. Dated Dec. 10th, 1914: James Allen Montgomery, Robert Marshall, James Reginald Kemp, Guy Matthews, James Douglas Carnon Swan, Vincent Joseph Lawless, William Lang Hodge, Arthur Victor Junius Harrison, Robert Masson Greig, Douglas Henry David Wooderson, Clare Oswald Stallybrass, Patrick Joseph Standish O'Grady, Richard Caldecott Monnington, Thomas Brownlie McKendrick, John Stephenson, Derwent Christopher Turnbull, Robert Masson Boyd, Sydney James Simpson, and Edwin Kidd. Dated Dec. 11th, 1914: William Morris and Cecil Anderson Boyd. Dated Dec. 12th, 1914: Carl Rudolf Baltzar Von Braun and Arnold Charles Summerson Courts.

Lieutenant William N. Alexander relinquishes his temporary commission (dated Dec. 10th, 1914).

Temporary Lieutenant Frederick G. Sharpe resigns his commission (dated Dec. 11th, 1914).

SUPPLEMENTARY TO REGULAR UNITS OR CORPS.

Royal Army Medical Corps.

The undermentioned Lieutenants are confirmed in their rank:—William C. Hartgill, Cecil S. Staddon, William M. Dickson, Frederick M. Lipscomb, Johan F. van der Westhuyzen, Gifford T. van der Vyver, Allan B. Hawkins, Andrew R. Ross, Robert W. S. Murray, Claude H. Fischel, James B. Fotheringham, William H. Elliott, Harry P. Rudolf, Joseph P. Quinn, James Swan, Thomas G. Fleming, John H. Sewart, Leo B. C. Marksman, Douglas N. Macleod, Frank M. Barnes, James L. McBean, Alexander G. S. Wallace, Edgar L. F. Nash, and Richard P. Starkie.

MEDICAL STAFF (INDIA).

To be Officer Commanding Indian Field Ambulance Training Corps:—Lieutenant-Colonel R. J. Baker, I.M.S. (retired) (dated Sept. 28th, 1914).

INDIAN MEDICAL SERVICE.

The King has approved the promotion of the following officers of the Indian Medical Service:—Captains to be Majors: Dated March 1st, 1914: John Lumsden Lunham. Dated July 31st, 1914: William Samuel Jagoe Shaw and Dwarka Prasad Goil. Dated Sept. 1st, 1914: Arthur Tregelles Pridham, John O'Leary, George Adam Jolly, Abdurrahman Khan Lauddie, Cuthbert Lindsay Dunn, William Henry Odlum, Raghuber Dayal Saigol, Cecil Edward Bulteel, Frederick Colin Rogers, and Clayton Alexander Francis Hingston.

The King has approved the grant of the temporary rank of Lieutenant to James Robert Hall Walker (dated Dec. 22nd, 1914).

The King has approved the transfer of Captain Gerald Lewis Colhoun Little to the Temporary Half Pay List (dated Nov. 15th, 1914).

The King has approved the retirement of Lieutenant-Colonel Edmund Wilkinson (dated Nov. 13th, 1914).

TERRITORIAL FORCE.

Royal Army Medical Corps.

3rd Northumbrian Field Ambulance: Surgeon-Captain Clarence B. Whitehead, from the 4th Battalion, Alexandra, Princess of Wales's Own (Yorkshire Regiment), to be Captain.

2nd London General Hospital: Arthur William Ormond to be Captain.

2nd Southern General Hospital: Captain Harold F. Mole resigns his commission on account of ill-health.

East Anglian Casualty Clearing Station: Major William A. Gibb, from Attached to Units other than Medical Units, to be Lieutenant-Colonel.

Northumbrian Casualty Clearing Station: Lieutenant-Colonel William E. Hume, from the 1st Northern General Hospital, to be Major.

2nd London Sanitary Company: John Crawford to be Lieutenant.

1st South Midland Mounted Brigade Field Ambulance: Alexander Mitchell to be Lieutenant.

3rd East Anglian Field Ambulance: Major George Alexander Troup, from Attached to Units other than Medical Units, to be Major.

3rd Highland Field Ambulance: Captain John Tait to be Major (temporary). Thomas Conn Britton (late Cadet, Edinburgh University Contingent, Senior Division, Officers Training Corps) to be Lieutenant.

2nd Home Counties Field Ambulance: Lieutenant Arthur Christopher Watkin, from Attached to Units other than Medical Units, to be Lieutenant.

1st East Lancashire Field Ambulance: Lieutenant John Buckley resigns his commission on account of ill-health.

1st Lowland Field Ambulance: The undermentioned to be Lieutenants: Stuart Robertson, Adam Rankine, and Robert Aim Lennie (late Cadet, Glasgow University Contingent, Senior Division, Officers Training Corps).

2nd Northern General Hospital: Lieutenant Frederick J. Stansfield, from the 1st West Riding Field Ambulance, to be Captain, whose services will be available on mobilisation.

2nd East Anglian Field Ambulance: Archibald Bruce Pettigrew to be Lieutenant.

3rd London (City of London) Field Ambulance: To be Lieutenants: Leonard Henry Wootton and Arthur Edward Huxtable.

Sanitary Service: Major E. Sergeant resigns his commission. Captain Herbert E. Corbin, from Attached to Units other than Medical Units, and Francis John Allan, whose services will be available on mobilisation, to be Captains.

Attached to Units other than Medical Units.—Josiah Field Hall (late Surgeon-Captain, 3rd Volunteer Battalion, The Queen's (Royal West Surrey Regiment)), to be Captain. To be Lieutenants: Leslie Mordaunt Ladell, Lieutenant Herbert Vawdrey Capon (from 2nd East Anglian Field Ambulance), Lieutenant Charles Frederick Searle (from 1st East Anglian Field Ambulance), Lieutenant Frederick Claude Kempson (from 3rd East Anglian Field Ambulance), Austen Andrew Bearne, Archibald Nathaniel Shirley Carmichael, William Louis René Wood, Hugh Archibald McLean, Thomas James Thomson, Edward James Blair (late Captain, 5th Battalion (Queen's Edinburgh Rifles), The Royal Scots (Lothian Regiment)), Angus Cameron, and Leslie Edward Hughes.

TERRITORIAL FORCE RESERVE.

Royal Army Medical Corps.

Major Frederick Lace, from Attached to Units other than Medical Units, to be Major.

Yeomanry.

Surgeon-Captain Reginald C. Gayer, from Surrey (Queen Mary's Regiment) Yeomanry, to be Surgeon-Captain.

DEATHS IN THE SERVICES.

Fleet-Surgeon John Neil Robertson, R.N., of the cruiser *Blake*, on Dec. 24th, at the Royal Naval Hospital, Plymouth. He was appointed to the *Blake* in March, 1913, and received his seniority in May, 1914.

Colonel William Johnston, C.B., A.M.S. (retired), at his residence in Aberdeen on Dec. 27th, aged 71. He received his first commission in 1865 and retired in 1892. He served in the Transvaal in 1878 and in the Zulu War in 1879 (mentioned in despatches, medal and clasp). During the South African War he acted as Assistant Director of the Army Medical Department at the War Office.

BULLETIN OF THE NAVAL MEDICAL ASSOCIATION OF JAPAN.

The ninth issue of this bulletin, dated May, 1914, which is just to hand, contains brief summaries in English of the articles written in Japanese character. Fleet-Surgeon T. Mitsunaga writes on the Emetine Treatment of Amœbic Dysentery; Fleet-Surgeon K. Yamada on Gara's Abdominal Symptom and Cathlin's Infections in Sciatica; Fleet-Surgeon I. Tateno on Roentgenotherapy in Tuberculosis of Bones and Joints; Fleet-Surgeon S. Hattori on Three Cases of Glioma Retinæ; Surgeon I. Ueda on Aneurysm of the Aorta; and Chief Apothecary S. Isono on Homologous Bodies of Adrenalin.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In the 97 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 8251 births and 5580 deaths were registered during the week ended Saturday, Dec. 19th, 1914. The annual rate of mortality in these towns, which had been 16·6, 15·3, and 15·7 per 1000 in the three preceding weeks, rose in the week under notice to 16·1 per 1000 of their aggregate population, estimated at 18,120,059 persons in the middle of the year 1914. During the first 11 weeks of last quarter the mean annual death-rate in these towns averaged 14·5, against 14·7 per 1000 in the metropolis. Among the several towns the death-rate during the week ranged from 6·3 in Cambridge, 7·5 in Gillingham, 8·0 in Ilford, 8·2 in Ipswich, and 8·5 in East Ham, to 22·8 in Oldham, 24·3 in Plymouth, 25·1 in Wigan, 25·4 in Southport, and 35·6 in West Hartlepool.

The 5580 deaths from all causes were 138 in excess of the number in the previous week, and included 465 which were referred to the principal epidemic diseases, against 439 and 429 in the two preceding weeks. Of these 465 deaths, 210 resulted from measles, 81 from infantile diarrhœal diseases, 70 from diphtheria, 56 from whooping-cough, 34 from scarlet fever, and 14 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·3, against 1·2 per 1000 in the previous week. The deaths attributed to measles, which had been 174, 155, and 181 in the three preceding weeks, further rose to 210 in the week under notice, and caused the highest annual death-rates of 1·9 in Huddersfield, 2·0 in Wakefield, 3·1 in Newcastle-on-Tyne, 3·2 in Plymouth, 4·0 in Grimsby, 4·3 in Merthyr Tydfil, 4·6 in Wigan, and 6·6 in Gateshead. The deaths of infants (under 2 years) referred to diarrhœa and enteritis, which had declined from 138 to 71 in the four preceding weeks, rose to 81, of which 28 were registered in London, 7 in Birmingham, and 6 in Manchester. The fatal cases of diphtheria, which had been 77, 99, and 62 in the three preceding weeks, rose to 70, and included 18 in London and 3 each in West Ham, Portsmouth, Southampton, and Liverpool. The deaths attributed to whooping-cough, which had increased from 35 to 50 in the four preceding weeks, further rose to 56, and included 11 in London, 7 in Liverpool, 4 in Stoke-on-Trent, and 3 in Bristol. The deaths referred to scarlet fever, which had been 42, 30, and 48 in the three preceding weeks, fell to 34, of which 10 occurred in London, 5 in Manchester, 3 in Liverpool, and 2 each in Birmingham and Derby. The fatal cases of enteric fever, which had been 11, 13, and 17 in the three preceding weeks, fell to 14, of which 2 belonged to London.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 5035, 4980, and 4893 at the end of the three preceding weeks, had further declined to 4763 on Saturday, Dec. 19th; 451 new cases were admitted during the week, against 623, 537, and 504 in the three preceding weeks. These hospitals also contained 1628 cases of diphtheria, 62 of enteric fever, 52 of measles, and 40 of whooping-cough, but not one of small-pox. The 1427 deaths from all causes in London were 87 in excess of the number in the previous week, and corresponded to an annual death-rate of 16·5 per 1000. The deaths referred to diseases of the respiratory system, which had been 324, 312, and 317 in the three preceding weeks, slightly fell in the week under notice to 314, but were 23 above the number registered in the corresponding week in 1913.

Of the 5580 deaths from all causes in the 97 towns, 203 resulted from different forms of violence and 441 were the subject of coroners' inquests, while 1557 occurred in public institutions. The causes of 58, or 1·0 per cent. of the total deaths, were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in its 14 suburban districts, in Leeds, Bristol, Bradford, Newcastle-on-Tyne, and in 55 other smaller towns. Of the 58 uncertified causes of death, 14 were registered in Liverpool, 9 in Birmingham, 6 in Bootle, 4 each in St. Helens and Gateshead, 3 in Stoke-on-Trent, and 2 in Tynemouth.

In the 97 English and Welsh towns 5859 births and 4882 deaths were registered during the week ended Saturday, Dec. 26th, 1914. The annual rate of mortality in these towns, which had been 15·3, 15·7, and 16·1 per 1000 in the three preceding weeks, declined to 14·0 per 1000 in the week under notice. During the first 12 weeks of last quarter the mean annual death-rate in these towns averaged 14·4, against 14·6 per 1000 in the metropolis. Among the several towns the death-rate during the week ranged from 5·6 in Eastbourne, 6·6 in Ealing, 7·0 in Wimbledon and in Hornsey, and 8·0 in Bournemouth, to 21·7 in Wigan, 21·9 in Newcastle-on-Tyne, 22·2 in St. Helens, 24·5 in Oldham, and 26·7 in West Hartlepool.

The 4882 deaths from all causes were 698 fewer than the number in the previous week, and included 411 which were referred to the principal epidemic diseases, against 429 and 465 in the two preceding weeks. Of these 411 deaths, 175 resulted from measles, 70 from infantile diarrhœal diseases, 66 from diphtheria, 58 from whooping-cough, 30 from scarlet fever, and 12 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·2, against 1·3 per 1000 in the previous week. The deaths attributed to measles, which had been 155, 181, and 210 in the three preceding weeks, fell to 175, and caused the highest annual death-rates of 1·9 in Birkenhead, 2·6 in Gateshead, 3·4 in Wigan and in Newcastle-on-Tyne, 4·2 in Huddersfield, 4·3 in Merthyr Tydfil, and 7·3 in Grimsby. The deaths of infants (under 2 years) referred to diarrhœa and enteritis, which had been 94, 71, and 81 in the three preceding weeks, declined to 70, and included 12 in London and 6 each in Stoke-on-Trent and Manchester. The fatal cases of diphtheria, which had been 99, 62, and 70 in the three preceding weeks, fell to 66, of which 13 were registered in London, 10 in Birmingham, and 3 each in Willesden, Stoke-on-Trent, Liverpool, and Bolton. The deaths attributed to whooping-cough, which had increased from 35 to 56 in the five preceding weeks, further rose to 58, and included 9 in London, 5 in Nottingham, 4 in Rhondda,

and 3 each in Bristol, Stoke-on-Trent, Leeds, Newcastle-on-Tyne, and Merthyr Tydfil. The deaths referred to scarlet fever, which had been 30, 48, and 34 in the three preceding weeks, further fell to 30, of which 6 belonged to London, 4 to Preston, 3 to Sheffield, and 2 each to Birmingham and Newcastle-on-Tyne. The fatal cases of enteric fever, which had been 13, 17, and 14 in the three preceding weeks, further declined to 12, but showed no excess in any particular town.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had declined from 5035 to 4763 in the four preceding weeks, had further fallen to 4583 on Saturday, Dec. 26th; 348 new cases were admitted during the week, against 537, 504, and 451 in the three preceding weeks. These hospitals also contained on Dec. 26th 1633 cases of diphtheria, 71 of enteric fever, 56 of measles, and 42 of whooping-cough, but not one of small-pox. The 1109 deaths from all causes in London were 317 fewer than the number in the previous week, and corresponded to an annual death-rate of 12·8 per 1000. The deaths referred to diseases of the respiratory system, which had been 312, 316, and 314 in the three preceding weeks, further declined to 270, and were 37 below the number registered in the corresponding week in 1913.

Of the 4882 deaths from all causes in the 97 towns, 192 resulted from different forms of violence, and 412 were the subject of coroners' inquests, while 1243 occurred in public institutions. The causes of 56, or 1·1 per cent., of the total deaths were uncertified, and included 15 in Birmingham, 7 in Liverpool, and 2 each in Coventry, Nottingham, Warrington, Blackpool, South Shields, Newcastle-on-Tyne, Tynemouth, and Carlisle. All the causes of death were duly certified in London and in 13 of its 14 suburban districts, in Manchester, Sheffield, Leeds, Bristol, Bradford, and in 50 other smaller towns.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of 1914, 1140 births and 791 deaths were registered during the week ended Saturday, Dec. 19th. The annual rate of mortality in these towns, which had been 18·4, 18·3, and 17·7 per 1000 in the three preceding weeks, rose to 18·0 per 1000 in the week under notice. During the first 11 weeks of last quarter the mean annual death-rate in these towns averaged 16·4, against 14·5 per 1000 in the 97 large English towns. Among the several towns the death-rate during the week ranged from 9·4 in Falkirk, 12·2 in Hamilton, and 12·6 in Motherwell, to 19·6 in Aberdeen, 24·1 in Greenock, and 32·2 in Perth.

The 791 deaths from all causes were 11 in excess of the number in the previous week, and included 81 which were referred to the principal epidemic diseases, against 79 and 76 in the two preceding weeks. Of these 81 deaths, 35 resulted from whooping-cough, 17 from scarlet fever, 15 from infantile diarrhœal diseases, 9 from diphtheria, 3 from measles, and 2 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·8, against 1·3 per 1000 in the 97 large English towns. The deaths attributed to whooping-cough, which had increased from 7 to 32 in the five preceding weeks, further rose to 35, of which 24 were registered in Glasgow, 5 in Dundee, and 2 each in Greenock and Clydebank. The deaths referred to scarlet fever, which had been 25, 15, and 14 in the three preceding weeks, rose to 17, and included 11 in Glasgow and 2 each in Edinburgh and Aberdeen. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had declined from 31 to 8 in the eight preceding weeks, rose to 15; 6 deaths occurred in Glasgow, 3 in Dundee, and 2 each in Aberdeen and Greenock. The deaths attributed to diphtheria, which had been 13, 20, and 16 in the three preceding weeks, further fell to 9, and included 3 each in Glasgow and Edinburgh. The 3 deaths referred to measles, comprising 2 in Dundee and 1 in Glasgow, were equal to the average in the earlier weeks of the quarter. The fatal cases of enteric fever were registered in Glasgow and Aberdeen.

The deaths referred to diseases of the respiratory system, which had been 163, 163, and 154 in the three preceding weeks, rose to 169 in the week under notice; 36 deaths resulted from various forms of violence, against 34 and 23 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland with an aggregate population estimated at 1,205,280 persons at the middle of 1914, 593 births and 503 deaths were registered during the week ended Saturday, Dec. 19th. The annual rate of mortality in these towns, which had increased from 17·7 to 21·1 per 1000 in the five preceding weeks, further rose to 21·3 per 1000 in the week under notice. During the first 11 weeks of last quarter the mean annual death-rate in these towns averaged 18·1, against corresponding rates of 14·5 and 16·4 per 1000 in the English and Scotch towns respectively. The annual death-rate in the week under notice was equal to 24·7 in Dublin (against 16·5 in London and 18·9 in Glasgow), 18·3 in Belfast, 27·2 in Cork, 15·2 in Londonderry, 20·3 in Limerick, and 22·8 in Waterford, while in the 21 smaller towns the mean death-rate was 22·2 per 1000.

The 503 deaths from all causes were 15 in excess of the number in the previous week, and included 46 which were referred to the principal epidemic diseases, against 42 and 43 in the two preceding weeks. Of these 46 deaths, 15 resulted from infantile diarrhœal diseases, 10 from scarlet fever, 8 from measles, 6 from diphtheria, 5 from whooping-cough, and 2 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·0, against 1·3 and 1·8 per 1000 in the English and Scotch towns respectively. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had been 10, 12, and 17 in the three preceding weeks, fell to 15, of which 6 were recorded in Dublin, 5 in Belfast, and 2 in Cork. The deaths referred to scarlet fever, which had declined from 14 to 8 in the five preceding weeks, rose to 10, and comprised 7 in Belfast, 2 in Dublin, and 1 in Waterford. The fatal cases of measles, which had been 14, 8, and 12 in the three preceding weeks, fell to 8, and included 7 in Belfast and 1 in Dublin. The 6 deaths attributed to diphtheria, of which 4 occurred in Dublin and 2 in Kilkenny, were double the average in the earlier weeks of the quarter. The five deaths referred to whooping-cough were all recorded in Belfast, and were slightly in excess of the average in recent weeks. The fatal cases of enteric fever were registered in Belfast and Ballymena. In addition to the above, a death from typhus was recorded in Galway.

The deaths referred to diseases of the respiratory system, which had been 100, 90, and 120 in the three preceding weeks, fell to 105 in the week under notice. Of the 503 deaths from all causes, 136, or 27 per cent., occurred in public institutions, and 13 resulted from various forms of violence. The causes of 21, or 4·2 per cent., of the total deaths were not certified by a registered medical practitioner or by a coroner after inquest; in the 97 large English towns the proportion did not exceed 1·0 per cent.

DONATIONS AND BEQUESTS.—By will the late James Brebner, of Wallington, Surrey, has left the larger part of his estate, which is of the value of £32,000, to be divided among certain charities. The following will receive an eleventh share each, viz.:—Hospital for Sick Children, Aberdeen; Cancer Hospital, Brompton; Hospital for Sick Children, Great Ormond-street; Royal Hospital for Incurables; and Royal Infirmary, Aberdeen.—The late Mr. H. L. Hargraves, J.P., of Oldham, left £5000 for the Endowment Fund of the Oldham Royal Infirmary.

UNIVERSITY OF EDINBURGH.—The graduation ceremony in medicine in connexion with the University was carried through in the McEwan Hall on Dec. 18th, 1914, Principal Sir William Turner presiding and conferring the degrees. In addition to the degrees in medicine one diploma was given in tropical medicine and hygiene. Addressing the graduates after he had conferred the degrees, Sir William Turner said he sometimes thought that the relation of the medical profession to the nation was very different now from what it was when he took his degree. In that somewhat distant time the medical profession looked for its work and its rewards in what was called private practice. There was very little public practice in those days. Now they had a highly organised public service, finding its work in the great towns and in country districts and in the supervision of the health of the industrial classes. All this had added naturally to the demand for highly trained medical men; what was aimed at nowadays was not only the treatment of disease but the prevention of disease. Referring to the number of graduates in uniform, he said that the nation knew that they had reached now a state in which the military life required a much greater number of the medical profession than what was needed in time of peace. There was, therefore, a special need that the young graduates of to-day who had not settled on a definite line of practice should consider how they could meet the arrangements of the nation in that respect. He also referred to the difficulties created in the country districts by the doctors being called away on military service, and said it was incumbent on the graduates to remember this aspect of their duty.

Correspondence.

"Audi alteram partem."

CIVIL MEDICAL PRACTICE AND THE WAR.

To the Editor of THE LANCET.

SIR,—At the instance of the Executive Committee of the General Medical Council proposals were recently submitted to the military authorities, the object of which was to improve the existing arrangements for Territorial Force Medical Officers. Many of these, owing to enforced changes of station, have been prevented from devoting part of their time to ordinary practice in their own districts; and in some localities the civil population has suffered from the resulting deficiency of medical services. Senior medical officers attached to Territorial General Hospitals in their own towns are able to combine, in some measure, their consulting, operative, or specialist practice with their local military duties; but regimental surgeons must accompany their units to training or other centres, which are often far removed from the parts of the country in which they practise, for service duties which do not always occupy their whole time.

It was suggested that, when a mobilised unit is moved from its own locality in this country, the Territorial Medical Officer might be allowed to effect an exchange, direct or indirect, with a Territorial Medical Officer in the new locality; or that, when such an exchange is not feasible, the place of the medical officer who does not desire to accompany his unit might be taken by a junior practitioner willing to accept a temporary commission, and to serve with the unit in question. In the latter case the original officer might be demobilised until his unit returned to its own locality, or until his military services could be otherwise utilised.

Again, numerous cases have occurred in which a mobilised Territorial unit has volunteered for Imperial service abroad (not necessarily at the front or even in Europe). In the absence of any provision for exchange the medical officer of such a unit would naturally feel constrained to follow it overseas, though his age and previous experience might be such as to render him less fit than a junior colleague for the special service required. It was accordingly proposed that in this instance the medical officer should have the option either of accompanying his unit or of serving with the corresponding reserve unit raised for home defence instead.

It was known that at the War Office a list is kept of junior practitioners who are willing to accept commissions for general service either at home or abroad, and the suggestion was offered that from this "waiting list" of practitioners who are eagerly desirous of "seeing service," substitutes for senior practitioners engaged in civil practice at home might be detailed as occasion arose. In this way it seemed practicable to minimise the inconveniences experienced both by practitioners and by their civil patients; and at the same time to utilise without delay the numbers of junior qualified men who have applied for commissions and are more or less idly awaiting a call for their services.

I have the satisfaction to state that the foregoing proposals have now been officially approved, and that arrangements are being made by the Army medical authorities to bring about the results desired by the Executive Committee of the Council.

I am, Sir, yours faithfully,

DONALD MACALISTER,
President, General Medical Council.

Medical Council Office, Oxford-street, W., Dec. 30th, 1914.

THE MEDICAL DIRECTORY.

To the Editor of THE LANCET.

SIR,—My attention had been drawn to the absence from Messrs. Churchill's Medical Directory for 1915 of the usual list of practitioners resident abroad. I am glad that this omission is being reconsidered, and I trust it may be rectified. Insurance offices throughout the kingdom possess and naturally consult the Medical Directory for references to practitioners possessing English qualifications resident abroad, and it is a considerable deprivation to such practitioners as well as a great inconvenience to life offices to be debarred from the means of such references. In sending patients abroad, also, a physician naturally looks up the Directory to find doctors with English qualifications to whom he can refer them. Moreover, it seems natural and right that the standard Medical Directory should contain the names of all possessing British qualifications whether at home or abroad.—I am, Sir, yours faithfully,

R. DOUGLAS POWELL,
Deputy Chairman, Clerical, Medical, and General Life Assurance Society.

Portland-place, W., Dec. 28th, 1914.

*** We learn this week from Messrs. Churchill that in the issue of the Medical Directory for 1916 the list of Practitione rs Resident Abroad will be reinstated.—ED. L.

THE TREATMENT OF WOUNDS IN WAR.

To the Editor of THE LANCET.

SIR,—Surgeons who are treating wounds on this side of the Channel will welcome Sir Anthony Bowlby's contribution to the above discussion in THE LANCET of Dec. 19th last. It should remove any doubts which may exist in reading Sir Watson Cheyne's paper, that surgeons out here are employing "aseptic" surgery as opposed to "antiseptic," and it will, I hope, bring home to captious critics the fact that "war is war and the surgery of war is not the surgery of peace." In this hospital we receive wounded direct by ambulance trains from the collecting stations, and it would be difficult to praise too highly the work done there as we see it here.

It is interesting to compare the wounds which I see at the base here with those which I saw at the base during Methuen's advance in the early part of the South African War. Probably 95 per cent. of the cases were bullet wounds, and the remainder shrapnel or shell fragment wounds. The great majority of the wounds of soft parts were dry, and had practically healed by the time they reached the base. Among these there would be a certain number of injuries to nerves and to main vessels which required operative treatment. When bones were injured the exit wound was often "explosive," yet many of these were clean; in some instances bones were actually perforated without complete fracture and without explosive exit. In some instances perforating wounds of the skull (chiefly in the frontal region) survived to find their way to the base.

By contrast, the trainloads that arrived here early in November conveyed more shell wounds than

bullet wounds, and more wounds from shell fragments than shrapnel. All shell wounds were septic. A small proportion of the penetrating bullet wounds of soft parts were of the South African type—i.e., clean, with small entry and exit and without intermediate laceration from axial rotation of the bullet; the majority were septic with intermediate laceration and irregular exit. In the non-explosive wounds injuries to the main vessels and nerves seem to be rare. Simple penetrating bone wounds are unknown, and the comminuted fractures are far worse both in extent and as regards sepsis. Penetrating wounds of the brain seldom reach the base, but gutter fractures (and in every case bone fragments are driven inwards) of the skull are quite common. More recently, as the result of increased entrenchment and siege warfare, bullet wounds have increased in their proportion to shell wounds. The clean penetrating and non-explosive wounds have, so far as I have seen, always been produced at short range. At longer ranges apparently the slightest deviation of impact from the normal to the surface results in rotation of the bullet on its transverse axis as it impinges, followed by churning up of the soft parts with laceration of the skin at exit. At very long ranges this same condition may be observed and confirmed by the retention of the bullet. The comparative frequency of gutter fractures of the skull is probably also explained by impact deviation. The difference between the wounds of soft parts here and in South Africa is doubtless due to the pointed bullet with its centre of gravity near the base as opposed to the dome-shaped Mauser bullet with its centre of gravity near the middle. It seems possible that the pointed bullet (when it does not rotate and lacerate) pushes its way past the main vessels and nerves rather than cuts its way through with injury to vessel and nerve. In other instances it will, as I have seen, penetrate a nerve of smaller diameter than itself and leave the continuity of the nerve intact, which would not be possible with the Mauser bullet. In the case referred to the bullet passed through the outer head of the median and the posterior cord of the brachial plexus without severing the nerves (though producing paralysis).

As regards sepsis, Sir A. Bowlby makes it clear that it is the highly fertilised soil as opposed to the sun-dried veld dust, trench warfare as opposed to skirmishing at long range, and the preponderance of devastating gun fire over rifle fire, which are the determining factors rather than the surgery or want of surgery at the front.

As regards the infection, apart from anaerobes, streptococcal and coli infections are fairly common; an initial staphylococcal infection is rare.

I am, Sir, yours faithfully,

C. GORDON WATSON.

Duchess of Westminster Hospital, Le Touquet, Dec. 24th, 1914.

ALCOHOL AND THE WAR.

To the Editor of THE LANCET.

SIR,—You were good enough to publish in your issue of Nov. 21st, 1914, an account of the conference which took place on Nov. 12th, under the presidency of His Grace the Archbishop of Canterbury, to consider the subject of alcohol and the war. Since then I have been appointed honorary secretary of the Central Emergency Committee which was formed by the conference in order to secure the carrying out of the resolutions which were passed by that influential gathering. It should be remembered that the conference was called together in order to support Lord Kitchener's appeal to the nation, issued through the Press Bureau, asking that the public should "help the soldiers," and especially urging that steps should be taken to educate public opinion in this matter. It is clear that Lord Kitchener had in his mind something beyond the ordinary risks which are associated with alcoholism, and when we refer to his message to the troops at the outset of the war we find that he warned them against the temptations connected with "wine and women," and said, "You must entirely resist both temptations." Major Darwin, as an old soldier and as one who has interested himself in the many difficult problems which bear upon the health and well-being of the nation, referred in his speech at the conference to the appalling connexion between alcohol and venereal disease and the special conditions which had been created by the war, including the crowding together of large masses of men in centres unaccustomed to receive them.

This is but one aspect of a great question, but I mention it because I consider that a grave responsibility rests upon the medical profession in this matter. That the profession is rising and will rise to the occasion I do not doubt for a moment, and the speeches of Sir Thomas Barlow and Sir T. Clifford Allbutt at the conference as already reported by you were of the greatest value. I venture, however, to appeal earnestly to medical men and medical women throughout our land to join in giving that support to Lord Kitchener's appeal which is needed at this moment. Every lord mayor and mayor, and chairmen of district councils have received an appeal from the Central Emergency Committee to take part in this movement in the hope that local emergency committees will be formed in each locality to ensure that the nation may respond to the call which comes to them to assist in promoting the utmost efficiency of all classes at this critical time.—I am, Sir, yours faithfully,

CHARLES F. HARFORD, M.D. Cantab.,
Honorary Secretary, Central Emergency Committee.

Paternoster House, E.C., Dec. 21st, 1914.

ANTISEPTIC TREATMENT OF WOUNDS.

To the Editor of THE LANCET.

SIR,—I have followed with great interest and instruction the various contributions to THE LANCET on the treatment of septic wounds, and although it is needless to say that the question of wounds in war is at the moment of paramount importance and interest, I feel there is an aspect of the question relating to both wounds in war and civil life which at any rate has not been settled by your correspondents. I refer to the place of iodine as an antiseptic. Iodine in alcohol as the ordinary tincture or in 2 per cent. solution—is it or is it not an effective destroyer of organisms and their spores?

I am perfectly well aware that Sir Watson Cheyne says it is not; that he says, indeed, it is the equivalent of only a 1 in 50 solution of phenol. Naturally I regard this considered pronouncement of so distinguished a surgeon with the greatest respect, but I venture to suggest that if this knowledge is shared by many of his colleagues it is certainly ignored.

Take, for example, the gynæcologist who uses it and swabs out the interior of a uterus which has been the source of an endless discharge; or Sir Anthony Bowlby, whose practice it is "to paint the skin far around with 2 per cent. iodine in spirit";

or the general practitioner who treats practically all wounds with the freest of applications of iodine and dry dressings.

Only the other day I was speaking to a surgeon on the staff of one of our greatest hospitals. I asked him how wounds were treated in the casualty department—was it with iodine and dry dressings? "That's it," he said. "What then," said I, "if 2 per cent. iodine is only a germicide like 1 in 50 carbolic?" "Oh," he answered, "that would be an awful pity, because we have all pinned our faith to it so." There is the whole point. Have we been right or wrong in pinning our faith to it so?

If wrong, so far as I am concerned, I do not want to hunt for this, that, or the other vaunted remedy. I shall go back to phenol pure for the wound and 1 in 20 for the surrounding parts. But I confess if we are wrong I shall be disappointed. Iodine is so quick in application, so simple, and, strange to say, so successful. Nevertheless, if it is established that its use is unsafe because of its feeble antiseptic powers, let us do away with it, because, as I have tried to show, its use has become "the method of choice" with so many. It should be for them now to establish or otherwise its effectiveness.

I am, Sir, yours faithfully,

ALEXANDER BROWN, M.B. Lond.

London, N.W., Dec. 19th, 1914.

HYALINE CASTS IN THE URINE.

To the Editor of THE LANCET.

SIR,—The interesting annotation in your issue of Dec. 26th last on the origin and nature of granular and hyaline renal casts leads me to think it worth while to ask the question, "What is the value of hyaline casts in the urine as an indication of renal disease, or even of renal disturbance?" After many years' observation I can say that they are to be found so often in the sediment of the centrifugalised urine, without any other evidence of renal disease, that they may often be passed by as of no moment, and I even venture to doubt if many of them come from the kidney at all. If there be no other evidence of renal disturbance they may, I think, be neglected. Surely they cannot all be washed out blood casts. Might not many of them be mucinous, and added to the urine in transit, and, if so, how distinguish between those of renal origin and those that are extraneous? I am, Sir, yours faithfully,

Dec. 26th, 1914. JAMES F. GOODHART.

A MINISTRY OF PUBLIC HEALTH.

To the Editor of THE LANCET.

SIR,—The leading article in THE LANCET of Dec. 19th, 1914, on the necessity for a Ministry of Public Health will be welcomed by many interested in public health. At the present time matters relating to public health are the concern of at least three different bodies—viz., the Board of Education, the Local Government Board, with its Public Health and Poor-law Departments, and the National Health Insurance Commission. That overlapping of the duties of these various bodies, considerable as it is, does not take place to a greater extent must be the result of the earnest desire for coöperation and coördination on the part of the chief medical officials responsible for the work of the several bodies. It would seem obvious that to coördinate the work of these several bodies another body, the Ministry of Public Health, should be instituted.

The present crisis has accentuated in the minds of the public the extreme importance of the health of the nation. Whether the individual rely in the future for the maintenance of our place among nations on force of arms or efficiency in manufacture or trade, all are at one on the necessity for the physical fitness of the inhabitants of the Empire. When peace is restored the attention of the public will be fixed in an increased degree on the measures necessary to obtain this result. The scope of the work of medical officers engaged in public health duties will be increased and a high degree of efficiency demanded.

But the present conditions as regard training, appointment, and service do not make for efficiency. The rapid headway made by the present movement for the improvement of the status of the medical officers actually engaged in the work of medical inspection of school children is a proof, if any were wanted, of the need for overhauling the whole system and the formation of a Public Health Service on the lines of the Naval, Military, and Indian Medical Services, with due regard to the principles of local government. This duty can only be undertaken by a Ministry of Public Health.

I am, Sir, yours faithfully,

Brighton, Dec. 21st, 1914. C. W. HUTT.

VACCINES AND THE GERMAN RAID: A USEFUL ANALOGY.

To the Editor of THE LANCET.

SIR,—The recent raid on the Yorkshire coast seems to provide so good an analogy to the action of vaccines on the human body that it may serve to clarify our ideas on the indications and contra-indications for vaccine treatment. The Germans obviously play the part of the germs which have invaded the body, while leucocytes are fairly comparable with the soldiers of the invaded country.

Let us consider the Yorkshire coast as the site of the injection of a vaccine into England. Here, as elsewhere, the young men, specially of the rural districts, have shown symptoms of lethargy and have not converted themselves into leucocytes as freely as they might have done. (I take the liberty of alternating the metaphor freely.) The injection of toxins by battleships into the superficial English tissues in Yorkshire will certainly result in a marked local leucocytosis, and these leucocytes will join the general blood stream and increase the general resisting powers of the body. If not the immunisation machinery of the body is in a very unhealthy state.

Again, when an efficient dose of vaccine is injected under the skin a red, angry lump is quickly formed at the site of injection consisting of leucocytes and antibodies antagonising the injected toxins. Doubtless we shall soon see some such local response in the case of our coast towns, taking the form of local levies or guns. But this raid illustrates also what I feel to be a further action of a vaccine—viz., that the injection of a proper dose of bacterial toxins acts as a circulating signal to rouse the defences of the whole body to a sense of the reality of invasion. And this is generally

made evident to the patient by a sense of stimulation and well-being in addition to his increased success in his war against the bacterial enemy.

To illustrate the contra-indications to vaccine treatment, imagine that England had already turned every man into a soldier and had spent all her money and resources in fighting the enemy. What would be the effect of a bombardment of coast towns then? It would merely add to the general havoc and could have no beneficial effect, because the whole nation had already been roused and could do no more. For the same reason I hold (with the majority) that it is useless or harmful to inject vaccines or tuberculin in the presence of an acute general bacterial infection when the body is already swamped with toxins and its defences already thoroughly aroused or even overwhelmed. Yet this is frequently done.

But Britain is in exactly the opposite state to this, and illustrates the condition in which a vaccine would be prescribed to arouse unexploited powers of resistance. And I can still say this, even although I have had the real grimness of the local situation brought home to me by a visit to Scarborough on the day following the bombardment.

Till further evidence is forthcoming I believe that the fundamental indication for a vaccine is when it may be expected to rouse dormant resisting powers.

I am, Sir, yours faithfully,

Hull, Dec. 21st, 1914. FRANK C. EVE.

WORKMEN'S COMPENSATION IN INJURIES OF THE EYE.

To the Editor of THE LANCET.

SIR,—In the ophthalmology section of your review of medicine during 1914 I confess I am rather dismayed to find no mention of the important discussion on "Workmen's Compensation in Injuries of the Eye," which took place at the last meeting of the Oxford Ophthalmological Congress (July, 1914). It was opened by Mr. William Robinson, and important papers dealing with the subject were read by Dr. Frank Shufflebotham, Mr. Angus MacNab, Mr. J. Jameson Evans, Mr. John Gray Clegg, Mr. G. H. Pooley, and Mr. R. J. Coulter. The majority of the foregoing communications were published in the *Ophthalmoscope* of September, 1914.

I am, Sir, yours faithfully,

SYDNEY STEPHENSON,

Welbeck-street, W., Dec. 28th, 1914. Master of the Congress.

AN IMPROVED (DOYEN'S) MOUTH GAG.

To the Editor of THE LANCET.

SIR,—There are many modifications of Doyen's original pattern, which is still sold by some makers. It was worked by a rack-catch (like artery forceps) instead of a ratchet and spring, so that its sudden release was sometimes difficult or impossible. Most of Mr. Charles Heath's objections[1] may be obviated by care. The guarding of the ratchet is, however, a distinct improvement on most patterns. In the one I use it is guarded by the (spiral) spring.

Nipping of the lower lip is a misfortune I used to find impossible always to avoid (especially with unruly children) when the gag has to be put in before induction of anæsthesia, as is necessary when using nitrous oxide or ethyl chloride alone. I have found it may be prevented by a piece of rubber about one-twentieth of an inch thick cut into the shape of a shield about three-quarters of an inch (less for a child) from top to bottom, with a horizontal slit near the top by which it may be fitted on the lower jaw of the gag, so that it will hang between the lower lip and teeth.

In Mr. Heath's model there is a shallow groove for the reception of the teeth, but I doubt whether this will prove always to be effectual.

I am, Sir, yours faithfully,

J. D. MORTIMER, M.B. Lond., F.R.C.S. Eng.
Anæsthetist, Central London Throat Hospital, &c.

Clifton Hill, N.W., Dec. 28th, 1914.

[1] THE LANCET, Dec. 19th, 1914, p. 1422.

STRETCHERS FOR THE WOUNDED IN TRENCHES.

To the Editor of THE LANCET.

SIR,—Captain G. K. Aubrey, in his interesting description of the "Fusilier" trench stretcher in THE LANCET of Dec. 26th, asks for suggestions from your readers which might assist in the solution of a point which, I think I am justified in saying, had not occurred to the majority of ambulance workers.

That severely wounded men should have to wait for assistance until nightfall, and that even then bearers should run the greatest risk of being shot, is a state of affairs which makes the provision of some method of transport which can be carried out during the daytime under the shelter of the trench of the greatest importance.

It occurs to me on reading his useful communication that in emergency an ordinary wheel-barrow could be adapted for the purpose of negotiating the sharp turns of the spurs thrown out to protect the trench from enfilading fire. Shallow troughs could be fixed on either side of the wheel, and in these the patient's legs could be laid. Where the bearer company was insufficient to deal with large numbers of the wounded, it would be possible to manage a case with only one bearer.

During the wet weather the depth of mud at the bottom of the trench might prevent any wheel conveyance being used with success; but in that case stretchers can be constructed by lashing short poles to an ordinary chair. The space between the front legs can be filled in by a piece of canvas stretched across, or by having some battens nailed to them. If the poles are lashed somewhat obliquely from below, upwards and backwards, the patient will have a reclining tilt when being carried. A rope lashed from the front legs to the back of the chair would prevent an insensible person from falling out sideways during transport.

I am, Sir, yours faithfully,

Dec. 29th, 1914. W. J. M. E.

THE MALLOCK-ARMSTRONG EAR-DEFENDER.

To the Editor of THE LANCET.

SIR,—Understanding that inquiries have been made at THE LANCET for further particulars as to the Mallock-Armstrong Ear-Defender, of which a notice with illustration appeared in your issue of Dec. 26th, 1914, I wish to say that I shall be pleased to furnish full particulars.

The price at which the 1915 pattern is retailed is 4*s.* per pair in a pocket-case of convenient form.

I am, Sir, yours faithfully,

H. N. G. COBBE.

86, York-street, Westminster, S.W., Dec. 30th, 1914.

Obituary.

BERNARD PITTS, M.A., M.B., M.C. CANTAB., F.R.C.S. ENG.,

CONSULTING SURGEON TO ST. THOMAS'S HOSPITAL AND THE HOSPITAL FOR CHILDREN, GREAT ORMOND-STREET.

IN the death of Mr. Bernard Pitts British surgery has to mourn the loss of one who in several ways was an ornament to his profession, the more so that being of an unostentatious disposition he never courted publicity or advancement.

Bernard Pitts was educated at Jesus College, Cambridge, and St. Thomas's Hospital. In 1875 he took his M.B. degree at Cambridge and also proceeded to the M.A. In the same year he became a Member of the Royal College of Surgeons of England, taking the Fellowship two years later. In 1876 he served as a medical officer during the Turco-Servian War. Returning to London he was appointed resident assistant surgeon to St. Thomas's Hospital in 1878, becoming full surgeon in due course. He retired from the active surgical staff in 1908 and was appointed consulting surgeon to the hospital. He had been lecturer on surgery at St. Thomas's, and his labours on behalf of the hospital, both as surgeon and teacher, were indefatigable. He had also served as surgeon to the Hospital for Children, Great Ormond-street, from which hospital also he retired in 1908, both retirements being occasioned by his failing health. He had been examiner in surgery at the Universities of Cambridge and Durham, and was a member of the Court of Examiners at the Royal College of Surgeons of England. He was one of the pioneers in this country of abdominal surgery in the treatment of intestinal diseases, while to his experience gained at the Great Ormond-street Hospital must be largely ascribed his lectures on the surgery of the air passages in children, delivered before the Royal College of Surgeons of England and published in our columns in 1893.

One of Mr. Pitts's colleagues writes: "Twenty-five years ago the profession in London knew Bernard Pitts well. He was known for his strong character, for his sagacity and judgment in difficult surgical emergencies, and for his great ability as an operating surgeon. He was at that time of very powerful build and delighted in outdoor exercise. In his early surgical life he was a pioneer in the treatment of acute obstruction, of growths in the bladder, of intussusception and of several other diseases of childhood. A certain shyness of notoriety and a robust contempt for advertisement prevented his merits being known except to a limited circle of intimate friends and pupils. For many years before the release of death came to Bernard Pitts it was his fate to travel along the valley of weakness, of illness, and of much suffering. Yet he always had a smile on his face, no word of complaint ever passed his lips, and his spirit remained undaunted and unconquered. Bernard Pitts was one of those of whom it is written, 'These are they which came out of great tribulation.' He died in the Faith."

METROPOLITAN HOSPITAL SUNDAY FUND.—At a meeting of this Fund held at the Mansion House on Dec. 22nd, 1914, it was decided to hold Hospital Sunday, 1915, on June 13th.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

DURING Christmas week the subscriptions to this Fund were very good, and there have been several important announcements of local activity, showing that interest in the movement is spreading.

A meeting of the Executive Committee was held on Tuesday, Dec. 22nd, when the question of assisting Belgian refugees, being medical men or pharmacists, with money again came up for discussion, it being felt in the Committee that the Fund should not be depleted by providing for any refugees the assistance which the Government had undertaken to supply, though in proper cases assistance should be granted. The distribution of money has now commenced.

A meeting of the Subcommittee, empowered for the present to make emergency grants was held at THE LANCET Office on Wednesday, Dec. 23rd, when Dr. Clément Philippe attended, and made applications, backed by the Belgian Medical Society in London, for relief of distress in certain cases. The Subcommittee made all the grants requested by Dr. Philippe save one, and also guaranteed the ordering of clothes in certain cases where it had been impossible to obtain the garments from charitable sources.

Action in Canada and the United States.

Sir Rickman Godlee has received information that a central committee for the relief of Belgian medical men and pharmacists has been organised in Toronto, while a similar movement has been taken in New York. The action in the United States, which has followed in a gratifying manner upon representations made by the British Committee, promises fair to be large and fruitful. Among those who have already identified themselves with the movement are: Dr. Charles H. Mayo, of Rochester, Minn.; Dr. Franklin Martin, of Chicago; Dr. William L. Rodman, President of the American Medical Association; Dr. J. M. T. Finney, of Baltimore, President of the American College of Surgeons; Dr. George H. Simmons, Editor of the *Journal of the American Medical Association;* and Dr. Thomas L. Stedman, Editor of the *Medical Record.*

The Scottish Committee.

The Scottish Committee of the Belgian Doctors' and Pharmacists' Relief Fund has now been completed and includes the Scottish representatives on the general committee, viz.:—

The Presidents of the three Scottish medical corporations.

Sir Thomas R. Fraser, Professor of Materia Medica, Edinburgh University.

David Gilmour, Dunfermline, Member of Council, Pharmaceutical Society.

J. Rutherford Hill, Resident Secretary, Pharmaceutical Society, Edinburgh.

Sir Donald MacAlister, K.C.B., Principal of Glasgow University.

Dr. J. Y. Mackay, Principal of University College, Dundee.

Dr. J. C. McVail, Crown nominee on General Medical Council.

Dr. William Russell, Professor of Clinical Medicine, Edinburgh University.

Dr. Norman Walker, Treasurer, Royal College of Physicians of Edinburgh.

Dr. T. K. Monro, Professor of Medicine, Glasgow University.

The following medical men and pharmacists have joined the Committee:—

Dr. John Adams, Member of Council of the British Medical Association.

Sir George T. Beatson, K.C.B., Chairman Scottish Branch, British Red Cross Society.

Sir Halliday Croom, Professor of Midwifery, Edinburgh University.

Dr. W. G. Dun, Treasurer, Royal Faculty of Physicians and Surgeons, Glasgow.

Mr. James L. Ewing, LL.D., Member of Pharmaceutical Society.

Mr. J. P. Gilmour, Chairman of North British Branch of Pharmaceutical Society.

Dr. John Gordon, President, Aberdeen Branch, British Medical Association.

Dr. J. R. Hamilton, Chairman of Scottish Committee, British Medical Association.

Dr. R. McKenzie Johnston, Treasurer, Royal College of Surgeons of Edinburgh.

Dr. Ashley W. Mackintosh, Professor of Medicine, Aberdeen University.

Dr. John Playfair, President, Edinburgh Branch, British Medical Association.

Dr. J. Scott Riddell, M.V.O., Senior Surgeon, Aberdeen Royal Infirmary.

Dr. Ralph Stockman, Professor of Materia Medica, Glasgow University. The honorary secretaries are (for Edinburgh and East of Scotland), R. Cranston Low, M.B., (for Glasgow and West of Scotland) J. Walker Downie, M.B., and J. Rutherford Hill, Resident Secretary, Pharmaceutical Society.

Subscriptions to the Fund should be sent direct either to the treasurers of the three Scottish corporations or to Mr. J. Rutherford Hill, Resident Secretary, Pharmaceutical Society, Edinburgh.

The Provisional Brussels Committee.

The following is the composition of the Provisional Belgian Committee in Brussels which is attempting to deal with the terrible misfortunes that have overtaken their colleagues, and with which it is the aim of the British Committee to coöperate:—

M. G. Bruylants, Professor at the University of Louvain, President of the Academy of Medicine.

Dr. O. Vanderlinden, Dean of the Faculty of Medicine of Ghent.

M. M. Delacre, Professor of Chemistry at the University of Ghent.

Dr. L. Frédéricq, Dean of the Faculty of Medicine of Liége.

M. A. Gilkinet, Professor of Pharmacy at the University of Liége.

Dr. A. Brachet, President of the Faculty of Medicine of Brussels.

M. A. Herlant, Professor of Pharmacy at the University of Brussels.

Dr. Herman, President of the Belgian Medical Federation.

M. Haazen, President of the National Union of Pharmacy.

Dr. Dejace, Chief Editor of the *Scalpel* at Flemalle.

*Dr. H. Coppez, Chief Editor of the *Journal Médical de Bruxelles*, and Professor at the University of Brussels.

Dr. De Busscher, Chief Editor of the *Belgique Médicale*.

Dr. Van Hassel, Surgeon at Paturages.

*Dr. C. Jacobs, Professor at the University of Brussels.

*Dr. V. Péchère, Professor at the University of Brussels.

*Dr. R. Sand, Professor at the University of Brussels.

*Dr. Dubois Havenith, Professor at the University of Brussels.

*M. A. Delacre, Pharmacist, President of the General Pharmaceutical Council.

*M. Breugelmans, General Secretary of the National Union of Pharmacy.

*M. Coels, Pharmacist.

The names preceded by an asterisk denote the Executive Committee.

The British Fund.

The subscriptions which have been received up to Tuesday evening last by Dr. Des Vœux, in addition to £2100 previously acknowledged, are as follows:—

	£	s.	d.
Dr. W. Haward	1	1	0
Dr. J. Elsdale Molson ...	5	0	0
Dr. J. Wm. Roberts ...	1	1	0
Dr. G. I. Dudley	1	1	0
Dr. Alfred Brown	3	3	0
Dr. Edward Law	2	2	0
Dr. Chas. Buttar	1	1	0
Dr. Thos. McCririck ...	1	1	0
Dr. J. R. Currie	2	2	0
Sir James A. Russell ...	3	3	0
Mr. F. Guthrie	2	2	0
Mr. A. McMillan	2	2	0
Mr. J. B. McVital	2	2	0
Mr. G. S. Kitchin	1	1	0
Mr. W. McCallum	1	1	0
Mr. John Weir	1	1	0
Mr. J. H. Murphy... ...	0	10	0
Mr. J. H. Smith	0	10	0
Mr. F. E. Bilson	2	2	0
Mr. F. F. Rowsell	2	2	0
Mr. C. W. Holmes... ...	1	1	0
Mr. J. H. Bishop	1	1	0
"Secundo Curo"	1	1	0
Mr. J. R. Ball	0	2	6
Mr. J. Y. Fairweather ...	0	5	0
Mr. H. Jenkins	1	1	0
Mr. J. F. Harrington ...	5	0	0
Messrs. Beach and Co....	3	3	0
Mr. F. W. Monsell... ...	1	1	0
Captain A. Falconer Hayden	5	5	0
Right Hon. J. M. Wilson, P.C., M.P.	5	0	0
Shropshire and Mid-Wales Branch, B.M.A. (per Dr. A. G. Mackenzie, Hon. Sec.)—			
Dr. R. de S. Stawell	2	2	0
Professor E. W. White	2	2	0
Dr. Willoughby Gardner...	3	3	0
Mr. H. H. B. MacLeod	1	1	0
Mr. Arthur Jackson	1	1	0
Dr. E. H. O. Sankey	1	1	0
Dr. T. Orr...	1	1	0
Dr. R. H. Urwick ...	1	1	0
Mr. Russ Wood ...	1	1	0
Dr. A. B. Blaikie ...	2	2	0
Dr. S. W. Thompstone	2	2	0
Mr. F. Whincup ...	1	1	0
Dr. John Murray ...	0	10	6
Dr. F. H. Pearce ...	1	1	0
Dr. Walter Hall ...	0	10	6
Dr. T. M. Cuthbert...	0	10	0
Dr. R. G. C Thornton	1	1	0
Dr. J. Wheatley ...	2	2	0
Dr. Leonard J. Godson	1	1	0
Mr. J. McClintock...	2	2	0
Dr. A. G. Mackenzie	1	1	0
Dr. Albert E. Nicholls...	2	2	0
Mr. G. D. Collins ...	0	10	6
Dr. W. Stanley Hughes	1	1	0
Dr. Cecil E. Salt ...	1	1	0
Dr. A. Dean Roberts	1	1	0
Dr. H. C. Woodhouse	1	1	0
Dr. J. Peploe Cartwright	1	1	0
Northampton Division, B.M.A. (per Dr. P. S. Hichens, Hon. Sec.)—			
Dr. P. White	1	0	0
Drs. Turner and Stevenson	0	10	0
Dr. Linnell	0	10	0
Dr. Byass	0	10	6
Mr. M. B. Odgers ...	0	10	0
Mr. J. H. Perceval...	0	10	0
Dr. C. J. Evans ...	0	10	0
Dr. Baseter	0	10	0
Dr. Gainer	1	1	0
Dr. Wickham	0	10	0
Dr. Mason...	1	0	0
Dr. Easte	0	10	0
Dr. Allinson	0	10	0
Dr. C. H. Wright ...	0	10	0
Dr. E. T. Milner ...	0	10	0
Dr. Oldacres	0	10	0
Dr. Baird	0	10	0
Dr. Churchouse ...	0	10	0
Dr. E. A. Sanders ...	2	2	0
Dr. Greenfield	0	10	0
Dr. O. Harvey ...	0	10	0
Dr. Selby	0	10	0
Dr. D. Stewart ...	1	1	0
Dr. Audland	0	10	0
Dr. Hollis...	0	10	0
Dr. F. J. Stuart ...	0	10	0
Dr. Robb	0	10	0
Dr. Hulbert	0	10	0
Dr. Vanvestraut ...	0	10	0
Dr. Wilkinson	0	10	0
Dr. Hichens	1	1	0
Dr. W. F. Addey	2	2	0
Dr. G. Crichton	1	0	0
Woolwich Division B.M.A. (per Dr. B. W. Lacey, Hon. Sec.):—			
Dr. S. R. Smith ...	1	1	0
Dr. G. Faris	1	1	0
Dr. A. E. Thompson	1	1	0
Dr. C. M. Greenway	1	1	0
Dr. F. L. Titley ...	1	1	0
Dr. C. F. Clarke ...	1	1	0
Dr. F. J. C. Blackmore	1	1	0
Dr. A. Mair	1	1	0
Dr. F. R. Patterson	0	10	6
Dr. J. B. Byles ...	0	10	6
Dr. F. L. Stephenson, C.B.	0	10	0
Dr. L. A. Barrow ...	1	1	0
Dr. J. Clarke	1	1	0
Dr. C. M. Smith ...	1	1	0
Dr. H. M. Wise ...	1	1	0
Dr. B. W. Lacey ...	1	1	0
Mr. E. Quant	1	1	0
Medical Insurance Agency	26	5	0
Dr. G. Basil Price	1	1	0
Dr. J. T. Rogerson... ...	1	1	0
Dr. J. P. Lusk...	1	1	0
Sir Francis H. Champneys	10	0	0
Dr. Duigan	1	1	0
Surgeon-Captain G. Sherman Bigg	1	0	0
Mr. Charles J. Heath ...	3	3	0
Dr. Charles Gibson ...	1	1	0
Dr. Samuel Davidson ...	1	1	0
Staff-Surgeon Douglas D. Turner	1	1	0
Medical Staff, R.N. Hospital, Dunskaith ...	1	1	0
Mr. F. Slater	1	1	0
Dr. C. H. Vrooman ...	5	0	0
Dr. J. T. Calcott	5	0	0
"Sincere Sympathiser"	1	1	0
West Herts Division, B.M.A. (second donation) (per Dr. K. J. Aveling, Hon. Sec.) ...	4	3	0
Dr. George Arthur ...	2	2	0
Dr. John McGregor ...	2	2	0
Dr. Walter Dodd	1	1	0
Dr. Howard S. Wilson	1	1	0
Dr. J. Sutcliffe	1	1	0

	£	s.	d.
Dr. J. Troup	1	1	0
British Medical Association	105	0	0
Lieutenant B. H. Wedd, R.A.M.C.	10	0	0
Dr. C. W. Buckley ...	1	1	0
Miss M. H. Fraser	1	1	0
Mr. A. J. Couzens	5	0	0
Dr. Soden	2	2	0
Dr. A. W. Tuxford... ...	1	1	0
Dr. H. H. I. Hitchon ...	2	2	0
Surgeon - General Sir Charles Cuffe, K.C.B.	2	2	0
Canterbury and Faversham Division, B.M.A. (per Mr. Nell Robson, Hon. Sec.)—			
Dr. A. B. R. Sworn	1	1	0
Dr. R. A. Bremner	1	1	0
Dr. R. G. Wills ...	1	1	0
Dr. Brian Rigden ...	1	1	0
Dr. Z. Prentice ...	1	1	0
Dr. F. Wacher ...	1	1	0
Dr. S. Wacher ...	1	1	0
Dr. H. Wacher ...	1	1	0
Dr. H. O. Preston ...	1	1	0
Dr. C. U. Ind	1	1	0
Dr. F. Noble	1	1	0
Dr. N. Robson	1	1	0
Dr. Norman-Robinson	1	1	0
Dr. L. A. Winter ...	1	1	0
Dr. Hope Grant ...	1	1	0
Dr. Margaret Todd	1	1	0
Dr. Robert W. Nairn ...	2	2	0
Major C. E. Pollock, R.A.M.C.	1	0	0
West Somerset Division B.M.A. (per Mr. W. B. Winckworth)—			
Dr. J. A. Macdonald	10	10	0
Dr. E. Liddon	5	0	0
Dr. R. L. Mead-King	5	0	0
Mr. W. B. Winckworth	5	0	0
Dr. Annie E. Clark	2	2	0
Dr. C. L. Tripp ...	2	2	0
Mr. W. H. Maidlow	1	10	0
Dr. H. T. S. Aveline	1	1	0
Dr. J. Codner	1	1	0
Dr. H. Downes ...	1	1	0
Mr. G. W. Edlington	1	1	0
Dr. A. R. Graham	1	1	0
Mr. H. W. Husbands	1	1	0
Mr. A. R. Iles	1	1	0
Dr. F. C. Joscelyne	1	1	0
Dr. C. G. MacVicker	1	1	0
Mr. W. H. Randolph	1	1	0
Dr. C. B. Stewart ...	1	1	0
Mr. R. H. Vereker...	1	1	0
Mr. A. D. Willcocks	1	1	0
Dr. N. Burns	0	10	6

Subscriptions to the Fund should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyd's Bank, Limited, and sent to Dr. H. A. Des Vœux, 14, Buckingham-gate, London, S.W.

THE APPEAL FOR SURGICAL INSTRUMENTS.

The Master of the Society of Apothecaries begs to acknowledge, with thanks, the receipt of surgical instruments, &c., kindly contributed by the following donors since the publication of the last list:—

Dr. John Gordon, Blackstock-road, Finsbury Park, N.; Mr. Edward Beaton, England's Lane, N.W.; Mr. Sydney G. Tibbles, Welbeck-street, W.; Dr. Lawrence Baine, Hull; Dr. C. W. Wilson, Grey Friars, Bury St. Edmund's; Anonymous; Sir Lauder Brunton (second contribution), Stratford-place, W.; Dr. Awdry, Berkeley.

THE WAR.

THE CASUALTY LIST.

THE following casualties among officers of the Royal Army Medical Corps serving with the Expeditionary Force have been reported since our last issue:—

Died of wounds: Lieutenant Charles Cochrane Iles.

Wounded: Lieutenant H. F. W. Adams.

Captain Malcolm Leckie, D.S.O., who was officially reported wounded and missing, is now unofficially reported to have died of his wounds.

THE WAR AND THE DISLOCATION OF PRIVATE PRACTICE.

A communication has been addressed by the Secretary of the War Office, dated Dec. 10th, to the general officers commanding in chief of the several Army Commands, which we are now at liberty to reproduce:—

I am commanded by the Army Council to acquaint you that in order to mitigate as far as possible the inconvenience to the civil population and to Territorial Force medical officers owing to enforced changes of station, the following measures will be adopted, the object in view being that these officers may be able, as many medical officers attached to general hospitals are at present able, to give part of their time to civil practice in their own districts:—

1. When a mobilised Territorial unit is moved from its own locality in Great Britain, the medical officers may be allowed—(*a*) To effect exchanges, direct or indirect, with Territorial medical officers in the new locality when possible. (*b*) If the above is not feasible, the places of medical officers not desiring to accompany their units may be taken by junior medical officers willing to take temporary commissions and serve with such units, the original medical officers being demobilised until the return of the units to their own localities, or until their services can be otherwise utilised there.

2. When a mobilised Territorial unit volunteers for Imperial service abroad the medical officer will be given the option of accompanying it or of serving with the reserve unit raised for home defence in its stead, vacancies in both units being filled up by junior medical officers with temporary commissions. To facilitate such exchanges a list is kept at the War Office of junior practitioners willing to accept general service either at home, in the field, or abroad, from which substitutes can be detailed as occasion arises. The medical officers themselves might be of assistance in procuring substitutes to take their places possibly from their own neighbourhoods, whose names would be placed on the list.

Lieutenant-Colonel A. P. Blenkinsop, writing for the Director-General of the Army Medical Service, calls particular attention to the concessions in paragraph 1 of this communication, as having been devised to mitigate as far as possible inconvenience to the civil population and to Territorial Force medical officers owing to enforced change of station.

A further communication has been received by the general officers in command from the Director-General of the Army Medical Service, which deals with a closely allied subject:—

I am directed to acquaint you that in view of the importance of allowing medical students to continue their studies in order to qualify as medical practitioners at the earliest possible date, it has been decided that any students who have joined medical units of the Territorial Force and wish to immediately resume their studies shall be released from service. I am therefore to request that you will cause a list of any such students serving in the medical units in your Command to be sent to this office as soon as possible.

It will be seen that both of these communications display the War Office as commendably alive to existing difficulties and future necessities.

THE CARE OF THE GERMAN WOUNDED.

It is clear that in Germany's long preparation for war the medical and ambulance organisation has not been overlooked. The German medical journals, which are delivered regularly in America, contain many descriptions of these matters, and it is curious to note how closely they parallel our own. Evidence is accumulating to show that our medical preparations were complete, and Germany can make the same claim. On our own side, however, there were complaints at first about the inadequacy of transport arrangements, but these were answered by the argument that no organisation, however perfect, could be expected to work faultlessly under the tremendous strain thrown upon it by the severe fighting of the first phase of the campaign in Northern France. Exactly the same thing has happened in Germany. Professor Czerny published certain friendly criticisms of the transport methods in the *Münchener Medizinische Wochenschrift*, whence they found their way into some of the daily papers. In the same journal, in the issue of Oct. 15th, an official reply has been printed, which deprecates criticisms of this kind, pointing out that although there were plenty of hospital trains for the German wounded these were cut off from the front by trains carrying troops and supplies. Freight trains were therefore used for the transportation of some of the wounded each being

accompanied by a medical staff. Provision has also been made for the proper equipment of such trains in case they have to be used again; for although there are at present 50 hospital trains running over a clear route, it is pointed out that this cannot be guaranteed if the number of wounded increases again. The Hamburg Red Cross Society has furnished a hospital train which it is claimed is the most efficient ever constructed. It has 36 cars, including 29 for seriously wounded men and 278 beds, a magazine car, a baggage car, a supply car, a surgeon's car, a dispensary, and a car for the hospital staff. The beds, which can be used as stretchers, have spring mattresses and an ample supply of clean linen and blankets. According to a letter to the *New York Medical Record* of Dec. 5th from a special correspondent with the German Army Medical Corps, the wounded are classified into those able to march, those who are fit for transport, and those who are not. To the last are affixed white labels, each with two removable red stripes. If one of these stripes is removed it signifies that the man is ready for transport; if both are removed, that he is fit to march. Each army corps has 12 field hospitals of 200 beds each. The surgical staff of each army corps consists of a surgeon in charge, assisted by an advisory surgeon and a sanitary expert. Beneath these are divisional, regimental staff, and battalion surgeons, with senior, assistant, and subordinate field surgeons. Each army corps also takes with it three sanitary columns. The losses have been severe; up to Oct. 20th 73 of the surgeons had been killed and a number were missing. Scarcely any but trained nurses are now being allowed to go to the front, some of the untrained volunteers having grumbled at the arduous nature of their duties. The *Deutsche Medizinische Wochenschrift* gives some examples of these complaints: one thought six hours was long enough for night duty, another did not like looking after tuberculous patients, and a third rebelled against going on duty at 7 A.M. Apparently the German army surgeons do not suffer these people gladly.

THE KING GEORGE HOSPITAL.

The names of the visiting staff of the large Red Cross Hospital with 1650 beds, known as the King George Hospital, which is being organised in the new Stationery Office buildings near Waterloo Bridge, have now been announced. Eight physicians and 24 surgeons have been appointed as follows:—

Physicians.—Sir John Broadbent, Dr. Farquhar Buzzard, Dr. James Collier, Dr. Raymond Crawfurd, Dr. J. A. Ormerod, Dr. Newton Pitt, Dr. F. M. Sandwith, and Dr. Lewis Smith.

Surgeons.—Mr. Joseph E. Adams, Mr. Donald Armour, Mr. Stanley Boyd, Mr. C. C. Choyce, Mr. Edred M. Corner, Mr. Herbert S. Clegg, Mr. Willmott Evans, Mr. W. H. Clayton-Greene, Sir W. Arbuthnot Lane, Mr. Lawrie McGavin, Mr. D'Arcy Power, Mr. H. Betham Robinson, Mr. James Sherren, Mr. S. Maynard Smith, Mr. Walter G. Spencer, Mr. F. J. Steward, Mr. Charters J. Symonds, Mr. Gordon Taylor, Mr. Wilfred Trotter, Mr. William Turner, Mr. J. W. Thomson Walker, Mr. H. J. Waring, and Mr. Herbert F. Waterhouse.

To the list of consulting physicians which we published on Dec. 19th, 1914, must be added the name of Dr. Samuel West. The names of the officers to take charge of the various special departments will be published shortly. Colonel J. Murray Irwin, R.A.M.C., has been appointed by the War Office as commandant. Mr. E. W. Morris, secretary of the London Hospital, will act as honorary secretary of the hospital, Mr. Oswald Williams as secretary, and Miss Davies, of the Army Nursing Reserve, as matron.

THE CARE OF THE SOLDIER'S FEET.

The importance of keeping the soldier's feet in good condition is well known, though perhaps the means of so doing are hardly sufficiently realised. For the purpose of instructing officers in foot inspection, as well as of teaching the men themselves, a leaflet has been drawn up, which has been adopted by many commanding officers of new battalions to be given to each man on enlisting. The circular reads as follows:—

Boots should fit with comfort, neither causing pressure nor being too loose, causing friction. The leather, if hard, can be softened with dubbin or oil. Nails or seams inside the boots must be removed, and the boots should be properly laced. Socks should fit easily, not too large or too small. Dirty socks, badly darned socks, socks with holes or too thin are a frequent cause of sore feet. Feet: The feet should be washed and thoroughly dried daily, and dusted with boracic powder. It is a good plan to soak the feet in a bucket of cold water, to which may be added a little permanganate of potash, alum powder, salt, or saltpetre. When blisters occur the serum should be let out with a clean needle, sterilised by passing through the flame of a match, the superficial skin not being removed. If sores occur they are best treated by the application of boracic lint or powder, a small piece of lint being strapped over the sore and renewed daily. Corns and hard skin can be easily relieved with the new miniature corn planes, or by applying a few drops of salicylic collodion for three nights, when the corns can be picked off after bathing the feet in hot water. Any soreness between the toes can be relieved by packing in a little cotton wool.

THE BRITISH RED CROSS SOCIETY.—The summary of the work for the week ending Dec. 19th states that during the past week the following have been despatched: 21 ambulances, 4 touring cars, 1 lorry and 1 soup kitchen to Boulogne; 3 ambulances, 2 touring cars and 1 lorry to Dunkirk; and 11 ambulances elsewhere in England.

The number of auxiliary home hospitals accepted by the War Office to date is 613, containing beds for 17,294, including 344 beds accepted during the past week. Mr. R. Fox-Symons, at the request of the War Office, went to Dublin with Colonel W. H. Horrocks, R.A.M.C., to inspect the Castle with a view to its suitability as a Red Cross hospital; details of this hospital are given elsewhere.

350 cases of stores were sent to the Continent. Of these, 159 went to Boulogne and 103 to Calais. In this country 165 hospitals were supplied with 419 cases of stores. During the past week 19,583 garments were received, and 11,099 were issued.

A daily list is received from Boulogne of wounded officers there or at other places. By arrangements with the War Office every wounded man in hospital will be handed a post-card bearing the name of the hospital in order that he may notify his next of kin.

The Netley Red Cross Hospital has its full number of beds now available, and there are 208 British, 152 Indian, and 10 Belgian sick and wounded soldiers occupying cots. Many of the counties which have erected huts are generously supplying gifts both for British and Indian wounded.

The British Red Cross work in France is dealt with in a special fly-sheet, signed by Sir Frederick Treves. His notes on the various voluntary hospitals established in the North of France make most satisfactory reading, and concerning the incidence of enteric fever he says, when referring to the Baltic Hospital, Calais: "Enteric fever is apparently not increasing. It is reported that there are only 200 to 250 cases of typhoid among Belgian soldiers in the whole of Calais. The new cases are coming in at the rate of about 10 a day."

THE INDIAN BASE HOSPITAL AT BRIGHTON.—The Government, having decided to make provision for 3000 wounded of the Indian Expeditionary Force at Brighton, sent down that distinguished Anglo-Indian officer, Sir Walter Lawrence, to make the necessary arrangements. He had no difficulty in carrying through most successfully all the details, largely owing to the patriotic spirit in which he was met by the various public bodies concerned. The Indian hospital is being placed in three blocks: the Pavilion Block, consisting of the Pavilion, Dome, and Corn Exchange; the York Place School Block; and the Poor-law Institution Block. In the former two blocks are about 500 beds each and in the Poor-law Block about 2000. The Pavilion has been practically entirely transformed into a Military Hospital; York-place School is likewise nearly complete; but a good time must elapse before the old workhouse can be converted, for there are nearly 1500 inmates for whom the guardians have to find accommodation, and this is by no means an easy task.

The staff, which is as yet not complete, is so far made up as follows. Colonel R. N. Campbell, C.B., C.I.E., has been appointed Administrator. He is a retired Indian medical officer, has seen service in the Naga Hills Expedition in 1879 and at Akha in 1883, and has been Inspector of Civil Hospitals in Assam. He has as registrar Lieutenant-Colonel W. H. Elliot, D.S.O., and as adjutant Captain A. I. Fortescue, R.A.M.C. At the Pavilion Branch Lieutenant-Colonel McLeod is in command, and is assisted by the following retired members of the Indian Medical Service: Lieutenant-Colonels O. H. Channer, J. G. Hulbert, W. S. P. Ricketts, and H. R. Woolbert; Majors M. Dick, Langston, and C. I. Williams, with Dr. Morton in charge of the X ray department. At York-place Lieutenant-Colonel Sweeny is in command, with Lieutenant-Colonel Coates as registrar. The other officers are Lieutenant-Colonels Joshua Duke, Crawford, Duer, Greaney, J. J. Pratt, and E. W. Young, and Major E. S. Peck. Lieutenant-Colonel T. D. C. Barry is acting as X ray specialist. There are also several members of the Royal Army Medical Corps attached to the hospital, and in addition to each 50 beds there are appointed an Indian native doctor and an Indian senior medical student.

The nursing arrangements are being carried out by members of the Royal Army Medical Corps and of the St. John Ambulance Association. These latter have come from all parts of the kingdom, principally the northern towns. About 40 sisters have been appointed to supervise the nursing and the management of the operating theatres, but they will take no part in the actual work of nursing. The cooking for the Indians presents a good deal more difficulty than it does in an ordinary hospital on account of the caste rules. Separate kitchens, cooks, and cooking utensils have been arranged for the Hindus, the most strict sect, and the Mussulmans. The Sikhs and the Gurkhas have joined with the former. The main diet of the men consists of curry, rice, and chupatties. The latter are cakes of unleavened bread, made from flour and water, and in cooking are tossed about by hand in a kind of pancake fashion on specially prepared ovens.

The baths for the men are all shower baths, both hot and cold. The Indian does not like the ordinary immersion bath of the Englishman. The water-closets, too, are quite different to those of the English hospital. They consist of stand-up latrines, with two places for the feet and a hole over which the Indian stoops and defæcates. The strict privacy of the Briton is not observed, the native performing his toilet operations in semi-publicity.

The Pavilion Hospital is nearly complete and o already occupied by wounded men. The cases admitted s far have not been of the most serious nature, for the men had been waiting on ships at Southampton for something like three weeks till the Brighton Hospital was ready for them, and therefore many had well advanced on the way to recovery. In the large circular Dome building there are rather more than 100 beds, in the rectangular Corn Exchange about the same number, the rest of the 500 being distributed in the various rooms, large and small, of the Pavilion itself. Of these, the spacious music and banqueting rooms form the chief wards. The hospital has its own two theatres, its X ray department, dispensary, stores-room, &c., and is complete in itself. The York Place Hospital, so patriotically placed at the disposal of the authorities by the Brighton Education Committee, is practically complete, and hardly recognisable as a former school building. It also is occupied by the injured from the front. The school class-rooms have been converted into wards, the gymnasium making a fine show with its 60 beds. Here, too, are the operating theatres, a fully equipped X ray department, and all the necessary accessories, such as a dispensary, medical officers' rooms, administrative rooms, and stores. The Brighton guardians, who have with commendable patriotism given up their great building, the Poor-law institution, have not yet been able to place out all their numerous inmates, but those responsible are rapidly making the necessary arrangements, and the administrator will shortly be able to start the process of converting the building into a great military hospital.

The language difficulty is not so formidable as it might seem at first sight. The officers of the Indian Medical Service speak the various dialects, there are a good many native doctors and students employed, and some of the Indians speak a little English. Notices in Nagri and Urdu are posted up about the building, so that, taking all things into consideration, this apparent difficulty has been quite well overcome.

The town of Brighton has, in addition to this 3000 beds for the Indians, had established in its midst the Second Eastern General Hospital, under the charge of Lieutenant-Colonel Rooth, with about 1000 beds, and also a Red Cross hospital, and branches of the base hospital at some of the permanent institutions of the town, such as the Royal Sussex County Hospital, the Sussex Eye Hospital, the dispensary, &c., making a total of not much short of 5000 beds. The public spirit of the borough and its inhabitants is to be admired.

DUBLIN CASTLE HOSPITAL.—Our Dublin Correspondent writes: "After many difficulties, some real and some manufactured out of personal or political virus, the scheme for the establishment of a Red Cross Hospital in Dublin Castle appears now to be in a fair way to success. Some weeks ago inspectors sent by the War Office and the British Red Cross Society visited the Castle and made several valuable suggestions to the local executive. Following on their visit the War Office gave its formal approval, limiting the number of beds to 250, however, in place of 450 originally proposed. The medical staff has been appointed in a manner which skilfully avoided all possibility of cavil or jealousy. Each of the clinical hospitals in Dublin, of which there are ten, was invited to nominate one surgeon and one physician. The hospital staffs cordially accepted the invitation, and the staff is now complete. These gentlemen are giving their services gratuitously, and each surgeon is to introduce an assistant, who will also give his services gratuitously. Anæsthetists, X ray officers, and resident surgeons will be paid. When the Castle Hospital is complete the accommodation therein provided, together with that available in the general hospitals, will be sufficient for about 700 soldiers—the complement of a hospital ship."

HOSPITAL TRAINS FOR THE FRONT.—The milling trade of the United Kingdom is making a generous gift to the British Red Cross Society for the purpose of providing two hospital trains for the transport of British wounded in France and Belgium. Two of these trains have been ordered at an estimated cost of £22,000, and they will be known as the United Kingdom Flour Millers' Hospital Trains. The total carrying capacity of each train will be 358 wounded (108 lying-down cases and 250 standing-up cases) with a staff and personnel of 51.—Through the generosity of the Egyptian Red Crescent Society a hospital train has been placed at the disposal of the military authorities in Egypt.

SOUTH AFRICAN AMBULANCE FOR FRANCE.—The services of the South African Field Ambulance Unit, which has been organised and equipped by the Anglo-French Branch of the British Red Cross Society of South Africa out of funds subscribed in that country, have been gratefully accepted by the French Government, which has placed at the disposal of the unit a hospital on the Riviera. A South African Committee is being formed in London for the support of this undertaking. The staff of the ambulance will comprise four surgeons, four dressers, a matron, and ten nursing sisters, four motor ambulances with drivers, and a

complete hospital equipment. The officer in charge of the unit is Dr. J. A. Casalis, President of the Société Française of Cape Town.

THE "MALLOCK-ARMSTRONG EAR DEFENDERS."—The many correspondents who have inquired where these appliances, described in this column last week, can be obtained are referred to a letter from Mr. H. N. G. Cobbe in this week's issue.

VACANCIES FOR MEDICAL OFFICERS.—Captain H. S. Fremlin, 1st London (County of London) Sanitary Company, R.A.M.C. (T.F.), asks us to state that medical men with sanitary qualifications are needed as officers in this company. Applications should be made to the Officer Commanding 1st London Sanitary Company, Duke of York's Headquarters, Chelsea, S.W.

LIVERPOOL MERCHANTS' MOBILE HOSPITAL.—Funds have been subscribed by the merchants of Liverpool for the provision of a military hospital for service at the Front in serious cases requiring prompt treatment. The committee of management has approved of a contract for building and erecting a hospital abroad at a cost of nearly £13,000. Although much more than this has been subscribed already, the equipment of the hospital will cost a considerable sum, and additional monthly donations for maintenance are needed. The committee have appointed Mr. T. C. Litler Jones senior surgeon, Dr. Nathan Raw senior physician, and Miss Whitson matron, with a nursing staff of 40. The hospital is expected to be ready to sail, if required, at the end of February. The essential idea of the scheme is to provide a hospital which can be quickly erected, taken to pieces, packed, removed, and re-erected upon a fresh site within 24 hours or so. It will consist of eight pavilion wards, each taking 26 patients, with the necessary staff accommodation and offices, with a central operation block and kitchen block, and nurses' and orderlies' quarters, laundry, bath, and isolation blocks, and pathological laboratory. All the building will be constructed of wood in portable sections and linked together by covered ways. The area occupied by the buildings will be nearly one acre, with a minimum site requirement of four acres.

Medical News.

UNIVERSITY OF CAMBRIDGE.—At examinations for medical and surgical degrees, Michaelmas term, 1914, the following candidates were successful:—

FIRST EXAMINATION—*October, 1914.*

Part I., Chemistry.—J. C. Ainsworth Davis, Christ's; H. Barbash, St. John's; R. H. O. Betham Robinson, King's; A. M. Broad, Caius; E. J. Crisp, Sidney Sussex; E. C. Curwen, Caius; H. V. Edwards, Trinity; A. C. Halliwell and A. T. Hawley, Caius; M. S. Thomson, Downing; J. S. Williams, Caius; R. L. Williams, St. John's; and D. W. Winnicott, Jesus.

Part II., Physics.—J. C. Ainsworth Davis, Christ's; H. S. Allen, King's; H. Barbash, St. John's; R. H. O. Betham Robinson, King's; A. M. Broad, Caius; E. J. Crisp, Sidney Sussex; E. C. Curwen, Caius; H. V. Edwards, Trinity; A. C. Halliwell, A. T. Hawley, and H. J. H. Hendley, Caius; R. Hilton, Corpus Christi; K. P. Lloyd-Williams, Clare; A. S. Redfern, Trinity; M. S. Thomson, Downing; and R. L. Williams, St. John's.

Part III., Elementary Biology.—R. H. O. Betham Robinson, King's; A. M. Broad, Caius; H. V. Edwards, Trinity; M. S. Thomson, Downing; J. S. Williams, Caius; and R. H. White, King's.

FIRST EXAMINATION—*December, 1914.*

Part I., Chemistry.—H. S. Allen, King's; W. B. Arnold and W. E. H. Banks, Clare; M. G. Begg, Caius; W. Breakell, Sidney Sussex; H. B. Bullen, B.A., Clare; C. Dunscombe, Downing; L. P. Garrod, King's; H. J. H. Hendley, Caius; G. W. Karunaratna, Clare; S. Orchard, Caius; P. Richardson, Christ's; R. E. R. Sanderson, Caius; F. G. Spear, Christ's; and R. C. Thorp, Caius.

Part II., Physics.—W. B. Arnold and W. E. H. Banks, Clare; M. G. Begg, Caius; H. B. Bullen, B.A., Clare; C. Dunscombe, Downing; M. W. H. Evans, Caius; L. P. Garrod, King's; S. Orchard and J. L. Potts, Caius; P. Richardson, Christ's; R. E. R. Sanderson, Caius; F. G. Spear, Christ's; J. S. Williams, Caius; and D. W. Winnicott, Jesus.

Part III., Elementary Biology.—J. C. Ainsworth Davis, Christ's; H. Barbash, St. John's; H. B. Bullen, B.A., Clare; R. Hilton, Corpus Christi; S. Orchard and R. E. R. Sanderson, Caius; R. L. Williams, St. John's; and D. W. Winnicott, Jesus.

SECOND EXAMINATION—*October, 1914.*

Part II., Pharmacology and General Pathology.—E. H. R. Altounyan, Emmanuel; D. J. Batterham, Caius; W. H. Blackburn, B.A., Christ's; R. S. Corbett and E. H. Dendy, B.A., Caius; J. M. Downie, B.A., Christ's; J. R. Earp, St. John's; J. S. Ellis, B.A., H. W. Featherstone, B.A., and L. P. L. Firman-Edwards, Trinity; H. Gardiner-Hill, B.A., Pembroke; E. A. Gibb, B.A., Emmanuel; C. C. Goodall, Caius; E. A. Green, B.A., Emmanuel; F. H. S. Greenish, B.A., and J. Hale, B.A., Caius; F. E. Higgins, B.A., and G. M. Kendall, B.A., St. John's; C. C. Kerby, B.A., and E. A. Leak, Trinity; W. J. MacCombie, B.A., Caius; G. L. Maule, B.A., Christ's; T. D. Morgan, B.A., Jesus; D. M. Muir, B.A., Trinity; E. S. Orme, Queens'; P. E. D. Pank, B.A., and D. W. R. Richardson, Caius; J. Rickman, B.A., King's; G. B. Sellwood, B.A., Emmanuel; W. J. D. Smyth, B.A., Pembroke; N. S. Tirard, Trinity; F. H. Vey, B.A., Clare; and R. C. P. Whitcombe, B.A., and H. G. E. Williams, B.A., King's.

SECOND EXAMINATION—*December, 1914.*

Part I.—E. V. Beale, King's; W. T. Beswick, B.A., and H. R. Bickerton, Trinity Hall; J. M. Bickerton, Pembroke; G. E. Birkett, Trinity Hall; C. N. Carter, B.A., Trinity; T. L. Crawhall, Caius; H. T. Cubbon, St. John's; W. L. Dandridge, Emmanuel; J. C. Davies, Trinity; S. R. S. Davies, Queens'; H. B. Dodwell, B.A., Emmanuel; F. N. V. Dyer, Clare; G. H. Gidlow Jackson, B.A., Trinity; H. H. Ginsburg, Downing; G. A. Harrison, Caius; L. B. Hartley, King's; L. G. Higgins, Clare; J. M. Higgington, St. John's; S. M. M. Jabir, Catharine; M. H. Jupe, Caius; J. G. Lawn, Sidney Sussex; J. B. S. Lewis, Downing; E. I. Lloyd, B.A., Trinity; A. G. F. McArthur, King's; C. J. Penny, B.A., Jesus; G. W. Pratt, B.A., St. John's; E. D. Spackman, Queens'; C. Suffern, B.A., Emmanuel; H. J. R. Surrage, Pembroke; M. B. R. Swann and W. E. Vaudrey, Caius; H. W. C. Vines, B.A., Christ's; W. J Walters, B.A., Clare; W. G. Wernicke, B.A., Emmanuel; and W. G. Woolrich, St. John's.

THIRD EXAMINATION—*December, 1914.*

Part I., Surgery and Midwifery.—W. K. Bigger, B.A., Emmanuel; P. R. Boswell, B.A., Queens'; T. J. H. Hoskin, B.A., Trinity; L. M. Ingle, B.A., King's; J. H. Jordan, B.A., Emmanuel; G. O. Maw, B.A., Pembroke; H. G. Oliver, B.A., Caius; D. V. Pickering, B.A., Emmanuel; R. T. Raine, B.A., H. Selwyn; W. H. C. Romanis, B.A., Trinity; and C. M. Ryley, and G. D. Sherwood, B.A., Emmanuel.

Part II.—F. L. Cassidi, B.A., Corpus Christi; C. L. Gimblett, B.A., Caius; N. Gray, B.A., Emmanuel; J. H. Jordan, B.A., Emmanuel; F. D. Marsh, B.A., Trinity; H. G. Oliver, B.A., Caius; A. G. Shera, B.A., and G. D. Sherwood, B.A., Emmanuel; and W. S. Soden, B.A., St. John's.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates were successful:—

Surgery.—D. Havard (Sections I. and II.), London Hospital; H. R. Ibbotson (Sections I. and II.), Leeds; J. G. Lewis (Section I.), Durham; C. H. Philips (Sections I. and II.), London Hospital; G. Robinson (Sections I. and II.), Manchester; and W. C. S. Wood (Sections I. and II.), King's College Hospital.

Medicine.—R. N. Cozier (Sections I. and II.), Ontario and Glasgow; C. J. G. Exley (Section I.), University College Hospital; A. E. Gravelle (Sections I. and II.), King's College Hospital; D. Havard (Section II.), London Hospital; D. M. Hunt (Section II.), London and Middlesex Hospitals; and T. J. R. Scholtz (Sections I. and II.), Amsterdam.

Forensic Medicine.—L. Bennet, Royal Free Hospital and Birmingham; R. N. Cozier, Ontario and Glasgow; R. Curle, Guy's Hospital; A. E. Gravelle, King's College Hospital; R. A. Holmes, Guy's Hospital; C. H. Philips, London Hospital; and T. J. R. Scholtz, Amsterdam.

Midwifery.—R. N. Cozier, Ontario and Glasgow; C. J. G. Exley, University College Hospital; N. Hoffmeister, Middlesex Hospital; R. A. Holmes and R. Quesada Jiménez, Guy's Hospital; and T. J. R. Scholtz, Amsterdam.

The Diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—D. Havard, H. R. Ibbotson, C. H. Philips, G. Robinson, T. J. R. Scholtz, and W. C. S. Wood.

UNIVERSITY OF LONDON.—At examinations held recently the following candidates were successful:—

M.D. EXAMINATION.

Branch I., Medicine.—Lionel Alfred Dingley, University College Hospital; Thomas Peters Edwards, St. Bartholomew's Hospital and University of Leeds; Edward Leslie Horsburgh, Victoria University of Manchester; Joseph Howell Lloyd and Jivraj Narayan Mehta (University medal), London Hospital; and John Tattersall, St. Mary's Hospital.

Branch III., Mental Diseases.—George William Blomfield James, St. Mary's Hospital; and James Cowan Woods (University medal), London Hospital.

Branch IV., Midwifery and Diseases of Women.—Florence Mary Edmonds and Alice Emilie Sanderson, London (Royal Free Hospital) School of Medicine for Women.

Branch V., State Medicine.—William Arthur Berry, St. Mary's Hospital and Royal Institute of Public Health.

SECOND EXAMINATION FOR MEDICAL DEGREES, PART I.

Organic and Applied Chemistry.—Arthur Lawrence Abel, University College; Mary Rushton Barkas, London (Royal Free Hospital) School of Medicine for Women; Maung Ba-Thin, Charles Courtney Bennett, and Cyril George Coombs, Guy's Hospital; Hedley Chave Cox, St. Bartholomew's Hospital; Douglas Alexander Dyer, King's College; Henry Ernest Karslake Eccles and Cecil Edward Eede Herington, St. Bartholomew's Hospital; Cyril Patrick Hines, King's College; Oscar Hyam Hyman, St. Thomas's Hospital; Henry Cyril Conwy Joyce, St. Bartholomew's Hospital; Margaret Hypatia Kingsford, London (Royal Free Hospital) School of Medicine for Women; Lloyd Kirwood Ledger, St. Bartholomew's Hospital; Gerald Esmond MacAlevey, St. Mary's Hospital; and Nai Synn, St. Bartholomew's Hospital.

N.B.—This list, published for the convenience of candidates, is issued subject to its approval by the Senate.

LONDON SCHOOL OF TROPICAL MEDICINE.—The following are the examination results of the forty-sixth session (October–December, 1914) of this school :—

W. I. Escoffery (Colonial Service) (Duncan medal), G. C. S. Perera (Colonial Service), A. E. Schokman, C. Deuntzer, E. F. Wills, J. E. Moffatt (Colonial Service), and E. B. Bate (Colonial Service).

VICTORIA UNIVERSITY OF MANCHESTER.—At examinations held recently the following candidates were successful :—

DIPLOMA IN DENTISTRY.

Final Examination.—Harry Morton, T. B. Place, John Smith, E. B. Warner, and J. V. Wilkinson.
Systematic Surgery and Pathology.—P. J. Kieran.
Pathology, Dental Prosthetics, and Operative Dentistry—A. D. Bleakley.
Third Examination.—Arthur Duffy, Austin Furniss, George Furniss, H. L. Howorth, Eunice W. Hughes, W. H. D. Quinn, Jessie I. Ramsden, and N. H. Wood.

RÖNTGEN SOCIETY.—At the next general meeting, on Tuesday, Jan. 5th, at 8.15 P.M., at the Institution of Electrical Engineers, Victoria Embankment, W.C., the adjourned discussion on the Localisation of Foreign Bodies by X Rays will be continued by Mr. E. S. Worrall, Dr. N. S. Finzi, Dr. R. W. A. Salmond, Mr. W. L. Schall, and Mr. Burnside. The February meeting will be held at the Middlesex Hospital, when Dr. Sidney Russ will read a paper on Measurements of the Radiations from the Coolidge and other X Ray Tubes in Clinical Practice.

RESIGNATION OF LORD ABERDEEN.—Several insurance committees and other bodies concerned in public health work in Ireland have passed resolutions expressing regret at the impending departure of Lord Aberdeen. Both His Excellency and Lady Aberdeen have taken an intense interest in all matters concerning the health of the country, and the popular campaign against tuberculosis owes its inception and much of its success to the zeal and energy of Lady Aberdeen.

WE regret to announce the death on Dec. 30th, in his eighty-seventh year, of Mr. Thomas Bryant, senior Fellow and former President of the Royal College of Surgeons of England.

BOOKS, ETC., RECEIVED.

ALLEN, GEORGE, AND UNWIN, Limited, London.
The Diplomatic History of the War. Edited by M. P. Price M.A. Price 7*s.* 6*d.*
The Kaiser's War. By Austin Harrison. With an introduction by Frederic Harrison. Price 2*s.* 6*d.* net.

APPLETON, D., AND COMPANY, London.
Anæsthesia. By. J. T. Gwathmey, M.D., in collaboration with Charles Baskerville, Ph.D., F.C.S. Price 25*s.* net.

ARNOLD, EDWARD, London.
Medical Nursing. By A. S. Woodwark, M.D., B.S. Lond., M.R.C.P. Lond., Lecturer on Medical Nursing at the Royal Waterloo Hospital. Price 4*s.* 6*d.* net.

BAILLIÈRE, TINDALL, AND COX, London.
A Manual of Diseases of the Eye. By C. H. May, M.D. New York, and Claud Worth, F.R.C.S. Eng. Fourth edition. Price 10*s.* 6*d.* net.

BALE, JOHN, SONS, AND DANIELSSON, LIMITED, London.
The Whole Art of Bandaging. By Thekla Bowser, Fellow of the Institute of Journalists. With introduction by James Cantlie, M.A., M.B., F.R.C.S. Price 1*s.* net.

CAMBRIDGE UNIVERSITY PRESS, Cambridge.
The House Fly Musca Domestica Linn: Its Structure, Habits, Development, Relation to Disease, and Control. By C. Gordon Hewitt, D.Sc., F.R.S.C., Dominion Entomologist of Canada. Price 15*s.* net.

CASAFIAL, G., TIPOGRAFIA DE, Coso, 96 y 98, Zaragoza.
Artrocaces (Artritis Tuberculosas) por el Dr. D. Ricardo Lozanzo Monzón. Price 15 ptas.

CONSTABLE AND CO., London.
The Acute Abdomen. By William Henry Battle, Senior Surgeon to St. Thomas's Hospital. Second edition, enlarged and illustrated. Price 10*s.* 6*d.* net.

FORSTER, GROOM, AND CO., LIMITED, 15, Charing Cross, S.W.
Field Ambulance Notes. By Captain M. F. Grant, R.A.M.C. Price 2*s.*

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.
A Text-book for Midwives. By J. S. Fairbairn, M.A., M.B., B.Ch. Oxon.. F.R.C.P. Lond., F.R.C.S. Eng., Obstetric Physician, St. Thomas's Hospital. 3 plates and 104 illustrations. Price 10*s.* 6*d.* net.

PIANISTENHARMONIE PRESSE, Zurich.
"Brahms Noblesse." By F. H. Clark.

SAUNDERS (W. B.) COMPANY, London.
A Manual of Obstetrics. By Ed. P. Davis, A.M., M.D., Professor of Obstetrics, Jefferson Medical College, Philadelphia. 171 illustrations. Price 10*s.* 6*d.* net.

SMITH, ELDER, AND CO., London.
The New Parent's Assistant. By Stephen Paget. Price 3*s.* 6*d.* net.
The Voyages of Captain Scott. Retold from "The Voyage of the 'Discovery,'" and "Scott's Last Expedition." By Charles Turley. With an introduction by Sir J. M. Barrie, Bart. Price 6*s.* net.

THE CLINICAL RESEARCH ASSOCIATION, Limited, Adelphi, London.
The Practitioner's Guide to Clinical Research. Alphabetically arranged in sections.

THE MACMILLAN COMPANY, New York and London.
Food Products. By Henry C. Sherman, Ph.D., Professor of Food Chemistry, Columbia University. Price 10*s.* net.
Feeble-Mindedness: Its Causes and Consequences. By H. H. Goddard, Ph.D., Director of the Research Laboratory of the Training School at Vineland. Price 17*s.* net.
Infection and Resistance. By Dr. Hans Zinsser, Professor of Bacteriology at the College of Physicians and Surgeons, Columbia University, New York. Price 15*s.* net.

UNWIN, T. FISHER, London.
From the Trenches. Louvain to the Aisne. The First Record of an Eye-witness. By Geoffrey Winthrop Young. Price 2*s.* net.

UPCOTT GILL AND SON, London.
Chivalry and the Wounded: the Hospitallers of St. John of Jerusalem (1014-1914). By E. M. Tenison. Price 1*s.*

WILEY, JOHN, AND SONS, New York. CHAPMAN AND HALL, London.
Elements of Physical Chemistry. By J. Livingston R. Morgan, Ph.D., Professor of Physical Chemistry in Columbia University. Fifth edition, revised and enlarged. Price 12*s.* 6*d.* net.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

COOMBES, PERCIVAL CHARLES, M.R.C.S., L.R.C.P. Lond., has been appointed Medical Superintendent of the Surrey County Asylum, Netherne, Merstham.
BIELDEN, H. A., M.D. Durh., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Shildon District of the county of Durham.
HOFFMANN, GEOFFREY, M.B., B.C. Cantab., has been appointed Medical Registrar at St. Thomas's Hospital.
MITCHINER, P. H., M.B., M.S. Lond., F.R.C.S. Eng., has been appointed Surgical Registrar at St. Thomas's Hospital.
MURRAY, SYDNEY B., M.B., B.S. Durh., L.M.S.S.A. Lond., has been appointed Assistant School Medical Officer for the County Borough of Sunderland.
ROUQUETTE, STEWART, M.B., M.C. Cantab., F.R.C.S. Eng., has been appointed Resident Assistant Surgeon at St. Thomas's Hospital.
SKILLEN, HUGH A., M.B., B.Ch. Belf., has been appointed Dispensary Medical Officer for Urban No. 1 District, Belfast.
SPENCER, G. W., M.B., B.C. Cantab., has been appointed Ophthalmic Registrar at St. Thomas's Hospital.
STEELE, T., M.B., C.M. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Hamilton District of the county of Lanarkshire.
WYATT, J. M., M.B., B.S. Lond., F.R.C.S. Eng., has been appointed Obstetric Registrar at St. Thomas's Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BARNSLEY, BECKETT HOSPITAL AND DISPENSARY.—Second House Surgeon, unmarried. Salary £100 per annum, with apartments, board, and laundry.
BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.
BIRKENHEAD BOROUGH HOSPITAL.—Junior House Surgeon. Salary £100 per annum, with board and laundry.
BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL, Woodchurch-road.—House Surgeon. Salary £100 per annum, with board, residence, and laundry.
BIRMINGHAM AND MIDLAND EYE HOSPITAL, Church-street.—Senior and Junior House Surgeons. Salaries £110 and £100 per annum respectively, with residence and board, &c.
BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer, unmarried. Salary £240 per annum, with apartments, fire, lights, and attendance.
BIRMINGHAM UNION.—DUDLEY-ROAD INFIRMARY: Second Assistant Medical Officer. Salary at rate of £210 per annum. Third Assistant Medical Officer. Salary at rate of £170 per annum. Fourth Assistant Medical Officer. Salary at rate of £160 per annum. SELLY OAK INFIRMARY: Assistant Medical Officer. Salary at rate of £180 per annum. All with apartments, rations, laundry, and attendance.

BOLTON INFIRMARY AND DISPENSARY.—Junior House Surgeon and Third House Surgeon. Salary £120 and £110 per annum respectively, with apartments, board, and attendance.

BRADFORD ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing.

BRADFORD, ST. LUKE'S HOSPITAL AND UNION HOUSE.—Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with rations, apartments, and washing.

BRIDGWATER HOSPITAL.—House Surgeon, unmarried. Salary at rate of £125 per annum, with board, lodging, and washing.

BRIGHTON, ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN.—House Surgeon. Salary at rate of £100 per annum, with board, lodging, and washing.

BRISTOL EYE HOSPITAL.—House Surgeon. Salary £100 per annum, with board, residence, and laundry.

BURY AND DISTRICT JOINT HOSPITAL BOARD.—Assistant to Medical Superintendent. Salary £200 per annum, with board, washing, and lodging.

CANCER HOSPITAL, Fulham-road, S.W.—Surgical Registrar. Salary £100 per annum.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—Senior House Surgeon and Junior House Surgeon, unmarried. Salary £100 and £90 per annum respectively, with board, lodging, and washing.

CANTERBURY, KENT COUNTY ASYLUM, Chartham.—Third Junior Assistant Medical Officer. Salary £250 per annum, with quarters, board, washing, &c.

CARDIFF, KING EDWARD VII.'s HOSPITAL.—Two House Surgeons for six months. Salary at rate of £140 per annum each, with board, residence, and laundry. Also Female House Surgeon for Ophthalmic and Ear and Throat Departments. Salary £140 per annum, with board, laundry, and residence.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Second House Surgeon. Salary £150 per annum, with board, apartments, and laundry.

CHICHESTER, WEST SUSSEX COUNTY MENTAL HOSPITAL.—Second Assistant Medical Officer. Salary £250 per annum, with apartments, board, laundry, and attendance.

DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon for six months. Salary £100 per annum, with board, residence, and washing.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—Resident House Surgeon. Salary £130 per annum.

EDMONTON EDUCATION COMMITTEE, URBAN DISTRICT COUNCIL, Middlesex.—Temporary Assistant School Medical Officer and Certifying Officer. Salary at rate of £300 per annum.

FIFE DISTRICT ASYLUM, Cupar.—Senior Assistant Medical Officer and Assistant Medical Officer. Salary £200 and £160 per annum respectively, with rooms, board, and attendance.

GLOUCESTER, GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

GREAT YARMOUTH HOSPITAL.—House Surgeon, unmarried. Salary £200 per annum, with board, lodging, and washing.

HULL CITY ASYLUM.—Junior Assistant Medical Officer. Salary £200 per annum, with board, lodging, and washing.

HULL, VICTORIA CHILDREN'S HOSPITAL, Park-street.—Female Resident House Surgeon. Salary £60 per annum, with board and laundry. Also Female Resident Assistant House Surgeon. Salary £50 per annum, with board and laundry.

KENT COUNTY COUNCIL.—Tuberculosis Officer. Salary at rate of £500 per annum.

LEEDS GENERAL INFIRMARY.—Ophthalmic House Surgeon for six months. Salary £50 per annum, with board, residence, and laundry.

LERWICK PARISH COUNCIL AND SHETLAND COMBINATION POORHOUSE COMMITTEE.—Medical Officer. Salary £78 per annum.

LIVERPOOL, DAVID LEWIS NORTHERN HOSPITAL.—House Physician and House Surgeon for six months. Salary at rate of £60 per annum each, with board, residence, and laundry.

LIVERPOOL STANLEY HOSPITAL.—House Surgeon. Salary £80 per annum, with board, residence, and laundry.

MANCHESTER, COUNTY ASYLUM, Prestwich.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing. Also Locum Tenens, unmarried. Salary £6 6s. per week.

MANCHESTER EDUCATION COMMITTEE.—Female Assistant School Medical Officer, unmarried. Salary £300 per annum.

MANCHESTER INSTITUTION AT CRUMPSALL.—Second Resident Assistant Medical Officer, unmarried. Salary £180 per annum, with rations, apartments, washing, and attendance.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Parkplace, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with residence, board, and washing.

MANCHESTER, VICTORIA MEMORIAL JEWISH HOSPITAL, Cheetham.—Female Resident Medical Officer for six months. Salary at rate of £80 per annum, with rooms, board, and laundry.

METROPOLITAN ASYLUMS BOARD INFECTIOUS HOSPITALS AND SANATORIA.—Assistant Medical Officers, unmarried. Salary £250 per annum, with residential allowances.

MILLER GENERAL HOSPITAL FOR SOUTH-EAST LONDON, Greenwich-road, S.E.—Senior House Surgeon for six months. Salary £100 per annum, with board, residence, and laundry.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Surgeon Laryngologist.

NEWPORT (MON.). ROYAL GWENT HOSPITAL.—Resident Medical Officer. Salary for first six months at rate of £100 per annum, second six months £125, and third six months £150, with board, residence, and laundry.

NOTTINGHAM GENERAL HOSPITAL.—Senior House Physician. Salary £120 per annum, with board, residence, and laundry.

PRESTON ROYAL INFIRMARY.—Assistant Resident Medical and Surgical Officer. Salary £120 per annum, with board, residence, and laundry.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—District Resident Medical Officer for four months. Salary at rate of £60 per annum, with board, residence, and washing.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Surgeon for six months. Salary £80 per annum, with board, residence, and washing.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL, 234, Great Portland-street, W.—Resident House Surgeon. Salary £100 per annum, with board, washing, &c.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Resident Medical Officer. Salary at rate of £150 per annum, with board and washing.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Resident Medical Officer. Salary at rate of £90 per annum, with board, residence, and laundry.

SALFORD ROYAL HOSPITAL.—Resident Surgical Officer and Casualty House Surgeon for six months. Salary at rate of £120 and £100 per annum respectively, with board and residence.

SALISBURY INFIRMARY.—Assistant House Surgeon, unmarried. Salary £75 per annum, with apartments, board, lodging, and washing.

SHEFFIELD CITY EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer. Salary £300 per annum.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Physician, unmarried. Salary £80 per annum, with board, lodging, and washing

SHEFFIELD ROYAL INFIRMARY.—House Surgeon and Assistant House Physician. Salary £100 per annum, with board and residence.

SIDLAW SANATORIUM.—Resident Medical Officer. Salary £125 per annum.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £115 per annum, with residence, board, and washing.

STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—House Physician and House Surgeon, unmarried. Salary at rate of £150 per annum each, with board, residence, and washing.

STROUD GENERAL HOSPITAL.—House Surgeon. Salary £120 per annum, with board, lodging, and washing.

SUNDERLAND COUNTY BOROUGH.—Temporary Tuberculosis Medical Officer. Salary at rate of £500 per annum.

SUNDERLAND ROYAL INFIRMARY.—Senior Resident Medical Officer and Two Junior House Surgeons. Salaries £150 and £120 per annum respectively, with board, residence, and laundry.

SWANSEA GENERAL AND EYE HOSPITAL.—House Surgeon. Salary £125 per annum, with board, washing, and attendance.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £150 per annum, with rooms, board, and washing.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, &c.

WAKEFIELD, CLAYTON HOSPITAL.—Senior House Surgeon. Salary £160 per annum, with board, lodging, and laundry.

WARRINGTON INFIRMARY AND DISPENSARY.—Senior House Surgeon. Salary at rate of £200 per annum, with board, apartments, and laundry.

WARRINGTON, LANCASHIRE COUNTY ASYLUM, Winwick.—Locum Tenens Medical Officer, unmarried. Salary 6 guineas per week, with apartments, board, attendance, and washing.

WEST BROMWICH AND DISTRICT HOSPITAL.—House Surgeon and Assistant House Surgeon, unmarried. Salary £150 and £120 per annum respectively, with residence, board, and laundry.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—Junior House Physician. Salary at rate of £100 per annum, with board, residence, and washing.

WESTERN OPHTHALMIC HOSPITAL, Marylebone-road, N.W.—House Surgeon. Salary £100 per annum.

WORCESTER GENERAL INFIRMARY.—Resident Medical Officer. Salary £150 per annum, with board, residence, and washing.

YORK COUNTY HOSPITAL.—House Physician and House Surgeon. Salary £150 per annum, with board, residence, and washing.

Births, Marriages, and Deaths.

BIRTHS.

EDGE.—On Dec. 25th, 1914, the wife of S. G. Edge, M.D., Wilnecote, Warwickshire, of a son.

EVANS.—On Dec. 22nd, 1914, at Princes-avenue, Hull, the wife of H. L. Evans, M.R.C.S., of a son.

PHILLIPS.—On Dec. 26th, 1914, at Clinton-road, Redruth, Cornwall, the wife of Lionel L. Phillips, M.R.C.S., of a daughter.

MARRIAGES.

ATLEE—HAMLEY.—On Dec. 23rd, 1914, at St. Stephen's Church, Hampstead, Charles Nelson Atlee, M.R.C.S., L.R.C.P., D.P.H., to Dorothy, youngest daughter of Frank Hamley, of Hampstead Hill-gardens, N.W.

VENABLES—COX.—On Dec. 23rd, 1914, at St. Augustine's, Grove Park, S.E., John Frederick Venables, M.B., B.Ch. Oxon., to Helen Creswicke, youngest daughter of Mrs. Cox, of Holford, Bridgwater.

DEATHS.

BEVAN.—On Dec. 12th, 1914, died of wounds received while serving in the ranks of the London Rifle Brigade in Flanders, Richard Vincent Bevan, dearly loved son of Richard Bevan, L.R.C.P. Lond., &c., Huxley Scholar, Charing Cross Medical School, aged 21 years.

LEACHMAN.—On Dec. 24th, 1914, at Fairley, Petersfield, Albert Warren Leachman, M.D., aged 76 years.

MACNALTY.—On Dec. 26th, 1914, at Dublin, Francis Charles MacNalty, M.A., M.D., M.Ch. Dub., aged 68 years.

SIMON.—On Dec. 22nd, 1914, at Penshurst, Edgbaston, Sir Robert M. Simon, M.D., F.R.C.P., of heart failure, following influenza, aged 64 years.

SIMPSON.—On Dec. 22nd, 1914, at Upper Montagu-street, W., John Pollock Simpson, M.D.

STOKER.—On Dec. 24th, 1914, at Hertford-street, Mayfair, W., Ernest Wilson Stoker, M.D., F.R.C.S.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

MEDICAL NOTES IN HISTORICAL MANUSCRIPTS.

THE following excerpts concerning medical and quasi-medical matters are taken from the valuable and extensive collections of State and family documents, now the property of the Duke of Portland, which are preserved at Welbeck Abbey, and which have been reported upon from time to time by the Historical Manuscripts Commission. The passages quoted throw interesting side-lights on the past, are sometimes amusing, and may in some instances be considered instructive.

Richard Andrews to the Countess of Newcastle, at Welbeck. London, May 10th, 1633.—"I understand your ladyship is with child, and that therefore you desire to be furnished with such help in physics as shall be fit, and such as you have had heretofore. I have therefore sent down to you a powder to hasten the birth and make it more easy. It is made of cassia, saffron, and borax. When you are in travail I would have you take of the powder as much as will lie upon a groat in a spoonful of burnt white wine or bezoar water, or spirit of saffron. If you should be long in labour and grow faint, there is an excellent cinnamon water to take a small spoonful of to refresh your spirits. But there is a water in a little glass, called Adrian Gilbert's water, which is commended above all others in childbirth. There are other comfortable waters and spirits sent down in a little 'seller,' of which you may make use now or at any time. There is a glass of *confectio alchermes* to take a little of when you are fainting, and in the evening you may take the quantity of a dry bean, either alone or mingled with cordial water, and four or five grains of bezoar stone. I have also sent you an eagle stone which in time of labour being tied about the thigh will make the labour easier."

Matthew Boucherett to the Earl of Newcastle, Welbeck, April 23rd, 1637.—"To enter into a discourse of the mineral waters lately found in Derbyshire, in Kedlaston Park, though I could wish it had fallen into the hands of a more skilful inquisitor of nature, yet since your lordship commanded it from me I will deliver my opinion briefly. That I may treat of them in order, it is necessary to find out from what mineral they borrow their quality. That which we first meet with is their strong smell, which shows the waters pass through a matrix where bitumen or a kind of clammy clay, like pitch, being of the nature of brimstone, is generated. If anyone had rather determine that they pass through sulphurous veins, I am not he that will absolutely contradict him, yet I must tell him the country people affirm that silver being cast into that water, taken from the spring head, was presently died of a gold colour, and I cannot conceive how that should come from sulphur, but rather from the aforesaid bitumen joined with nitre or some other fossil salt, whose tenuity doth dye the silver of a gold colour. Moreover, that country is so replenished with mines of coal, which are nothing else but bitumen petrified, that I may believe these waters pass through veins where coals are yet in their first principles, I mean before they be grown to a hardness, and from thence these waters borrow their quality. Besides some of these waters being distilled do show the same, for nothing whatsoever remains in the bottom of the lymbeck, but a little portion of salt with a certain black substance which clearly shows the smell, colour, and savour of bitumen. I cannot find any reason that they pass through veins of iron or vitriol. The taste denotes no such thing. I have mixed gall with them which is accustomed to turn such waters to ink, but this hath not changed the colour of these. Out of these things it may be lawful to declare those waters to be bituminous and a little nitrous. From hence it is evident they are of a hot temperament and abound with their spirits. Now, if it be safe to drink these waters they are good against ulcers in the neck of the bladder. If they be actually hot, they are good against all old pains in the joints arising from moist and cold causes, being used in manner of a bath. As they are, they are good to exsiccate all external ulcers."

Viscount Conway to his Nephew (Colonel Edward Harley).—"1651, October 14.—I am glad you are recovering of your sickness. I know one who cures the bloody flux with the powder of ginger, and holds it very secret."

The Same to the Same.—"1651, October 21.—Colonel Grantham gave me some of the powder to stay a flux; he would not tell what it was, but I found out. He says it is also good for consumption."

The Same to the Same.—"1651, Nov. 25.—I am glad you are recovered. Let me know how you found the ginger operated with you, or whether you used other remedies. I see you have been talking with your physician about water and that you think that in the much boiling the thinnest and finest parts of the water go away and leave only the most gross, unwholesome, and earthy parts ..... There are not in the world greater fooles than philosophers nor greater knaves than physicians, unlesse it be the priests of this age, who are both."

Colonel E. Harley to his Father, Sir Robert Harley.—"1653, June 11, Westminster.—I am much troubled that riding lately has so ill agreed with you. I have spoken about your condition to Dr. Bathurst. He will send you larger directions, but at present he desires you to forbear strong diuretics, and that you would endeavour not to drink after you are in bed. He saith nothing is more hurtful for you in regard of your paralytic inclination. He prescribes turpentine pills as very good, as well against the palsy as against the infirmity of your bladder. If it please you to command my sister to make it, I have great hopes the lime drink might be very helpful to you."

Viscount Conway to Colonel E. Harley.—"1653, June 21 Petworth.—If your father suspect stone in the bladder he would do well to be searched, which may be easily done and without danger. He would also do well to take heed of violent medicines and of such as are given to break the stone, for they bring down violently gravel and cause very ill accidents and often death."

Samuel Wildey to the King.—"1660, October 8, Rotterdam.—The general report being here that his Highness the Duke of York is by God's Almighty hand visited with the small pox, I most humbly pray your Majesty that a drop of blood should not be draw from the veines of his Royall Highness, been very dangerous in his condition and firstly cause the death. The long experience that I have in that sorte of sickness make me so bold to sent my advice to your Majesty."

The Same to the Same.—(No date.)—"Remedy for the small pox: Take new laid eggs, three yolkes and whites, fry them in fresh butter that was never salted, twelve onces, till the eggs be very hard. Then pour the butter from the eggs into a basson full of fayre cold water. Let it stand till the butter be cold and caked, then take it of from the water and put it into a fayre vessell and beat it with a wooded spatter, continually adding three or four drops of damaske rose water, till the butter with beating come to be white. Then take of that unguent four onces, add to it *saccarum* sugar-candy, *albi* two drams, finely pulverizated misse, *fyat electuarium*. Be sure to give of this three times a day and so in the night the quantity of a nutmegg upon a knife point. Let it dissolve in his mouth and swallow it down—this by God's grace and assistance will cure the small pox in the throat which is the cause of most men's death in that disease. Then take the unguent without the candy and warme it in a saucer and anoynt the face and eyes with a feather morning and evening, and this preserves the eyes and keeps the face from pitting. ... *Probatum est.* Now if it please God that his Royall Highness the Duc of York cannot sleep, lett a live pidgeon be slitt in two, and one halfe be applyed so soone as it is splitt to the sole of one foot and the other halfe to the sole of the other foot, fast bound with rowlers and so remaine twenty-four houres, and by God help that will procure sleep and extract the venemous quality of the disease from the heart and vitall spirits."

Doctor S. Johnson to Sir Robert Harley.—"1664, Aug. 22.—I am heartily glad to hear of your cheerfulness and increase of strength, but must earnestly desire you not to be too adventurous. I would also know whether you have had the opinion of the physicians concerning wine diluted, which truly I think may be convenient, and if so I shall make a choice of some for your use. I desire allsoe that you may have a tame fox to be kept neer the house, especially if you can endure the smell, but however it cannot but bee verie beneficiall."

Sir E. Harley to Lady Harley.—"1670, March 7.—I am sorry Robin has caught an ague. I think it is not good to tamper too much with him."

The Same to the Same.—"1670, March 11.—Dr. Sydenham would not have you give Robin any physic in his fits but posset drink with sage and the like. I think centaury boiled is good and so is horse dung posset."

Margaret Lady FitzJames to her Sister, Lady Harley.—"1673, Aug. 1, Fairfield.—My sister is now in ease and as cheerful as it can be expected. The wound in her breast is narrower than it was but very deep, to the very bone. The doctor fears it is incurable. She has been for four days before I came in extreme pain which was caused by

Sir John Wroth's tricks, exciting his horse into a fury. ..... The doctor says my sister may live some years, but if the humor should come to be sharpe, as it was once before, I fear her time will not be long. The doctor speaks of ten years."

Ann Palmer to her Sister, Lady Harley.—"1673, Aug. 2.—I have a great deall to say if I were with you but can't in a letter. My breast is broke as I beleve you have heard, and it eats away more and more, soe as the doctor tells me plainly that there is noe cure but by manuall operation, and that is soe dangerous and painfull as I thinck not to submit to it, for he saith the cancer is fixt, and, as he thinckes, the rib is fouled. Though it was the first as I heard speak of it yet to mee it was not strainge, because I thought it was soe afore. There are waters in this country which have cured a cancer in a woman's breast but it is not like mine; but being now in a desperate condition I am willing to try it as it is approved by the doctor to allay pain and keep the melancholy humor low. I was for a fortnight in great pain but now I am at ease."

Sir E. Harley to Dr. Ridgley.—Brampton, 1682, December 12.—A letter consulting him concerning pains in the head and "vertiginious fitts," from which he has been suffering since his fortieth year, and mentioning that he has always found the use of senna, rhubarb, tartar, pearl, crabs' eyes, and coral agreeable.

(To be continued.)

ILLEGIBLE PRESCRIPTIONS.

OUR contemporary the *Chemist and Druggist* in its issue of Dec. 26th, 1914, reproduces the most atrociously illegible prescription we have ever seen, and invites us to express our opinion upon it.

The pharmacist to whom the original was handed is said to have dispensed it as:—

Mist. mag. ℥ mag. sulph. ℥i.
Aq. ad ℥vi.
℥i t.d.s.

But unless the dispenser and the prescriber had a private understanding and a private code—which is possible in some panel practices—there is only one thing to be said about such a scrawl, and that is that the medical man who wrote it ought to be ashamed of himself.

PAINFUL HEELS.

To the Editor of THE LANCET.

SIR,—May I answer your correspondent on p. 976 of THE LANCET of Oct. 17th, 1914? Pain in one heel is often due to the presence of so-called calcaneum spur, which could be easily detected by an X ray photograph. I have seen several cases of this curious anomaly myself. Operative treatment is necessary. Some years ago there appeared an excellent article on it in *La Presse Médicale*.

I am, Sir, yours faithfully,
Santiago, Chili, Nov. 20th, 1914. H. BOSHOUWERS.

*** In THE LANCET of July 24th, 1909, p. 223, we published a case of "Painful Heels" in a patient aged 60, by Dr. E. Reginald Morton, of London. This was accompanied by two skiagrams of the right and left feet, distinctly showing the thorn-like processes or spurs.—ED. L.

"THE CRAIGLEITH HOSPITAL CHRONICLE."

THE Territorial military hospital of the city of Edinburgh is situated at Craigleith, and is officially known as the Second Scottish General Hospital R.A.M.C. (T.).[1] We have received a copy of the first issue (dated December, 1914) of the *Craigleith Hospital Chronicle*, which is intended to provide month by month a record of matters interesting to all those who are directly or indirectly connected with this large and important organisation. The opening Christmas number forms cheerful and intimate reading for staff, friends, and patients alike, and it is embellished with a charming photogravure of Raeburn's full-length portrait of "The Macnab" in the form of a presentation plate. The colonel commanding the hospital, Lieutenant-Colonel Sir Joseph Fayrer, in his Foreword pays a tribute to the loyalty and devotion of all serving under him, whom he characterises as "a huge happy family." All profits from the sale of this family chronicle will be devoted to supplying extra comforts and luxuries for the wounded, and we wish it every success in its twofold mission.

[1] THE LANCET, Sept. 19th, 1914, p. 773.

THE QUEEN'S "WORK FOR WOMEN" FUND.

Mrs. C. Arthur Pearson, the honorary treasurer, and Lady Roxburgh, the honorary secretary, of the Queen's "Work for Women" Fund, announce that their special Christmas-time appeal for shillings to provide women with work has produced the splendid total of 167,446 shillings, equivalent to £8372 6*s*. Mrs. Pearson and Lady Roxburgh desire to thank all those who have so generously responded to the appeal. The total realised is exceedingly gratifying, not only as evidence of the confidence of the public in the practical nature of the measures of help which are being carried out, but also as a guarantee of the popularity and prosperity of the Fund in the future.

"SPIRITS FROM THE VASTY DEEP."

A WELL-KNOWN London physician has sent to us for publication a letter which he received a little time ago from a Mr. J. F. Gems, writing from 4, Lower Seymour-street, Portman-square, W., and describing himself as a member of the Finance Committee of the British Hospital for Mental Disorders. We quote the following extracts from this curious document:—

> "The Rev. Susannah Harris, whose wonderful psychic gifts enable our departed friends to communicate with us in the direct voice, has kindly offered her services free for the benefit of the British Hospital for Mental Disorders. There will be a sitting on Friday, the 18th inst., at 7 o'clock, at the house of Mrs. Forbes Winslow, 57, Devonshire-street, Portland-place, W. Admission fee 10*s*. 6*d*.
>
> The sitters will be confined to less than 20, so that the conditions may be good, and are asked to attend 10 minutes before the commencement. At the sitting on Tuesday the conditions were very good, and all present, with one exception, had evidence of the identity of friends passed over. ..... If you wish to avail yourself of Friday's opportunity I shall be glad if you will let me know as soon as possible, particularly if you should desire to bring a friend."

In a passage which we have omitted Mr. Gems states that the hostess of the previous séance had talks with her late husband, "who spoke of friends on both sides of life and gave her some valuable advice regarding a legal matter."

Our correspondent says, with a good deal of force, that the collection of money for a hospital, especially for a hospital for mental diseases, by means such as these, seems to him most improper, if not illegal. By reproducing the greater part of the letter we think we have absolved ourselves from any obligation to comment further.

Dr. H. Marens.—We wholly agree with part of our correspondent's complaint.

Dr. H. Wheeler.—The "new style" to which our correspondent objects is certainly not graceful.

Dr. T. P. Lucas.—The preparation of carica papaia deserves trial in suitable cases, but the claims made on its behalf seem far too wide.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Dec. 30th, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Dec. 24	30·112	N.E.	...	53	42	36	36	36	Cloudy
,, 25	30·300	S.E.	...	50	41	32	34	35	Cloudy
,, 26	30·100	S.	0·30	48	46	35	38	42	Raining
,, 27	29·700	S.W.	0·39	65	51	42	45	46	Cloudy
,, 28	29·200	W.	1·06	52	51	46	51	52	Overcast
,, 29	29·580	W.	...	54	44	34	37	37	Cloudy
,, 30	29·930	S.W.	...	54	47	35	37	38	Fine

The following magazines, journals, &c., have been received:—New Zealand Medical Journal, Pacific Medical Journal, Calcutta Medical Journal, Cleveland Medical Journal, American Journal of Roentgenology, American Journal of Tropical Diseases and Preventive Medicine, Hospital Assistant, Medical Review of Reviews, American Journal of Obstetrics, Archives of Internal Medicine, Child's Guardian, Journal of Nervous and Mental Disease, British Journal of Dermatology, Journal of Physiology, Royal London Ophthalmic Hospital Reports, Journal of Hygiene, Journal of the Scottish Meterological Society.

Medical Diary for the ensuing Week.

SOCIETIES.

RÖNTGEN SOCIETY, Institution of Electrical Engineers, Victoria Embankment, W.C.

TUESDAY.—8.15 P.M., Adjourned Discussion on the Localisation of Foreign Bodies by X Rays. Continued by Mr. E. S. Worrall, Dr. N. S. Finzi, Dr. R. W. A. Salmond, Mr. W. L. Schall, and Mr. Burnside.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Clinical Meeting.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne-street, Edgware-road, W.

THURSDAY.—8 P.M., Annual General Meeting. Election of Officers. President's Address. Conversazione.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY AND FRIDAY.—3 P.M., Lecture:—Dr. A. Wylie: Diseases of the Larynx.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M., Clinical Lecture.

For further particulars of the above Lectures, &c., see Advertisement Pages.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1914 were given in THE LANCET of Dec. 26th, 1914.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1914 will be ready shortly. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

Cases for binding the half year's numbers are now ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

(The rate for the United Kingdom will apply also to Medical Subordinates in India whose rates of pay, including allowances, is less than Rs.50 per month.)

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied.

SOLE AGENTS FOR AMERICA—MESSRS. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; Mr. E. Arnold, Lond.; Mr. D. Y. Alta, Rotterdam; Mr. R. Alcock, Hanley.

B.—Messrs. Burroughs Wellcome and Co., Lond.; Berrow's Worcester Journal Co., Worcester; Messrs. C. Barker and Sons, Lond.; Messrs. W. H. Bailey and Son, Lond.; Mr. S. T. Beckett, Leeds; Mr. G. B. Bartlett, Lond.; Messrs. C. Birchall, Liverpool; Monsieur Ch. Boulanger, Paris; Bibliothèque de l'Institut Pasteur, Paris; British Red Cross Society, Lond., Secretary of; Dr. H. Boshouwers, Santiago; Staff-Surgeon W. Bastian; Mr. G. G. Blake, Lond.; Mr. Fred A. Binney, San Diego, California; British Milk Products Co., Lond.; Bombay Medical Union, Librarian of; Mr G. S. Bigg, Lond.; Major J. W. Barrett, C.M.G., Melbourne; Bolton Infirmary and Dispensary, Secretary of; Bibliothèque de l'Université, Bordeaux; Mr. R. Bevan, Lond.; Messrs. W. Browning and Co., Lond.; Messrs. T. B. Browne, Lond.; Messrs. Baiss Brothers and Stevenson, Lond.; British Medical Association, Secretary of the Nottingham Division; Mr. C. A. Ballance, Liverpool; Dr. A. G. Bateman, Lond.

C.—Dr. J. T. Costouros, Nauplia; Messrs. Cassell and Co., Lond.; Messrs. E. Cook and Co., Lond.; County Asylum, Prestwich, Superintendent of; Mr. R. Clapp, Whitchurch; Mrs. T. Corpe, Lond.; Mr. L. H. Curtis, Hayward's Heath; *The Chemist and Druggist*, Lond., Editor of; Messrs. W. S. Cater and Co., Launceston; Mr. J. Chronnell, Hindley; Dr. F. Coates, Belfast; Dr. B. Champion, Ballarat East; Messrs. Chas. D. Clayton, Lond.; Chesterfield Hospital, &c., Secretary of; Dr. Myer Copians, Lond.; Dr. A. E. Carver, Birmingham.

D.—Mr. J. H. Dauber, Lond.; Messrs. W. Dawson and Sons, Lond.; Davis Gas Stove Co., Lond.; Sir Bryan Donkin, Lond.; Dr. D. Leighton Davies, Cardiff; Professor Sheridan Delépine, Manchester; Sir Arthur Downes, Lond.; Department of Militia

[*Acknowledgments continued on next page.*

and Defence, Ottawa, Secretary of; Dundee Royal Infirmary, Secretary of.

E.—Dr. J. A. Elmere, Osage City, Kansas, U.S.A.; Edmonton Education Committee, Secretary of; Enquirer.

F.—Mr. C. J. Fernandes, Calcutta; Fife and Kinross District Asylum, Cupar, Medical Superintendent of; Sir Joseph Fayrer, Bart., Edinburgh; Dr. Anthony Feiling, Lond.; Captain H. Fremlin, R.A.M.C.(T.), Lond.; Dr. J. Freeman, Lond.; Fine Art Society, Lond.

G.—Mr. F. H. Gervis, Torquay; Sir James Goodhart, Lond.; Dr. A. M. H. Gray, Lond.; Dr. Gordon, Oporto; Gloucestershire Royal Infirmary, Gloucester, Secretary of; Mrs. Gauld, Manchester; Messrs. Gordon and Gotch, Lond.; Dr. Edwin Goodall, Cardiff; Dr. J. O. Gavronsky, Lond.

H.—Mr. H. E. Haynes, Brentwood; Colonel J. C. Humphreys, Haslemere; Messrs. Hough, Hoseason, and Co., Manchester; Messrs. C. J. Hewlett and Son, Lond.; Dr. F. Hare, Beckenham; Mr. E. C. Hardwicke, Weltevreden; Mr. Arthur W. Hare, Newquay; Dr. James I. Halstead, Burnley; Mr. W. H. Heygate, Belvedere; Mr. J. Hoole, Parwich; Harveian Society of London, Hon. Secretary of; Mr. F. S. D. Hogg, Rickmansworth; Dr. C. O. Hawthorne, Lond.; Mr. W. F. Howe, Southsea; Dr. G. C. Hardwick.

I.—Lieutenant-Colonel D. L. Irvine, Paris.

J.—Professor C. Jacobs, Lond.; Dr. George Jubb, Hartlepool.

K.—Dr. H. Kerr, Newcastle-on-Tyne; Dr. Cameron Kidd, Bromsgrove; Kent and Canterbury Hospital, Canterbury; Dr. G. Kirkwood, Peterborough; Mr. P. E. Kingsford, Lond.; Dr. J. F. Keenan, Edgeworthstown; Kent County Asylum, Maidstone, Clerk to the; King Edward VII. Hospital, Cardiff, Secretary of; Mr. Percy Kingsford, Dover.

L.—Lancashire County Asylum, Winwick, Clerk to the; Dr. T. D. Luke, Peebles; Local Government Board, Lond., Secretary of; Dr. Thomas P. Lucas, Brisbane; Mr. G. Lane, Balsham; Mr. J. Lorimer, Lond.; London Throat Hospital, Secretary of; Liverpool Stanley Hospital, Secretary of; Mr. H. K. Lewis, Lond.

M.—Mr. J. F. Mackenzie, Edinburgh; Messrs. F. Mundy, Gilbert, and Co., Birmingham; Mrs. Morison, Lond.; Mr. J. E. May, Lond.; Messrs. Macé and Haldane, Lond.; Manchester Guardians, Clerk to the; Dr. J. Miller, Edinburgh; Mr. John D. Malcolm, Lond.; Colonel A. W. Mayo-Robson; Dr. Spencer Mort, Lond.; Dr. John A. C. Macewen, Glasgow; Mr. Sydney E. Murray, Gosforth; Dr. I. B. Muirhead, Lond.; Mr. J. D. Mortimer, Lond.; Dr. Dan McKenzie, Lond.; *Midland Counties Herald*, Birmingham, Manager of; Manchester Northern Hospital, Secretary of; Mrs. McCarrison, Welwyn; Messrs. Mayer and Meltzer, Lond.; Mr. J. Y. W. MacAlister, Lond.; Dr. J. C. McWalter, Dublin; Dr. T. MacCombie, Lond.

N.—Mr. H. L. C. Noel, Rothesay; Mr. F. Newland-Pedley, Rouen; North Staffordshire Infirmary, Stoke-on-Trent, Secretary of; Newcastle-upon-Tyne Education Committee, Director of; Lieutenant V. P. Norman, I.M.S., Lond.; Newcastle-upon-Tyne Corporation, Medical Officer of Health of.

O.—The Orthophone Co., Lond.

P.—Messrs. Parke, Davis, and Co., Lond.; Mr. W. H. Plows, Lond.; Mr. C. E. Pronger, Harrogate; Parkinson Stove Co., Birmingham; P. L. G.; Prudential Insurance Company of America, Newark; Sir R. Douglas Powell, Bart., Lond.; Miss Eleanor Piggott, Lond.; Messrs. C. Pool and Co., Lond.; Dr. S. G. Papadopoulos, Lond.

R.—Mrs. M. Rand, Cheltenham; Registered Nurses' Society, Lond.; Messrs. Richardson and Co., Lond.; Royal Albert Institution, Lancaster, Secretary of; Royal Medical Benevolent Fund, Lond., Secretary of; Royal Institution of Great Britain, Lond.; Messrs. Robertson and Scott, Edinburgh; Mr. A. E. Rogers, Lond.

S.—Dr. W. W. Stainthorpe, Saltburn-by-the-Sea; Mr. C. Stonham, Lond.; Mr. C. Scholl, Liverpool; Dr. A. Wood Smith, Salisbury; St. Andrew's Hospital, Northampton, Clerk to the; Mr. A. P. Stokes, Bexhill-on-Sea; Messrs. G. Street and Co., Lond.; Dr. C. Simpson, Towcester; Mr. A. Skeffington, Lond.; Professor W. Stirling, Manchester; Mrs. A. L. Spier, Salcombe; *The Smallholder*, Lond., Editor of; Salvation Army, Lond., International Secretary of; Society of Apothecaries of London, Secretary of; Dr. J. Smyly, Peking; Mr. F. L. Simons, Edinburgh; Fleet-Surgeon E. Sutton, R.N.; Mr. Sydney Stephenson, Lond.; Messrs. Spiers and Pond, Lond.; Sheffield Education Committee, Secretary of; Dr. C. J. Sutherland, South Shields; Mr. D. H. Shuttleworth-Brown, Lond.; Mr. Edgar Stevenson, Liverpool.

T.—Dr. G. H. Taylor, Sydney; Mr. A. F. Tredgold, Guildford; Messrs. W. Thacker and Co., Lond.; Dr. R. H. Todd, Sydney; Dr. W. W. C. Topley, Lond.

U.—University of London, Principal of; University of Edinburgh, Secretary of the Senatus Academicus.

V.—Victoria Children's Hospital, Hull, Assistant Secretary of; Mrs. B. Valpy, Hindhead.

W.—Dr. W. A. Winship, San Diego, California; Messrs. John Wyeth and Brother, Philadelphia; Dr. F. T. H. Wood, Lond.; Messrs. J. Wright and Co., Birmingham; Messrs. Willows, Francis, and Butler, Lond.; Dr. Norman Walker, Edinburgh; Mr. C. Gordon Watson, France; Dr. W. I. De C. Wheeler, Dublin; War Office, Lond., Secretary of; Dr. F. J. Waldo, Lond.; Messrs. John Williams and Son, Bradford; West Ham, &c., General Hospital, Secretary of; Women Sanitary Inspectors' Association, Lond., Hon. Secretary of; Mr. C. G. Russ Wood, Lond.; Dr. Humphrey Wheeler, High Wycombe; Dr. S. E. White, Lond.

Y.—Yost Typewriter Co., Lond.

Z.—Messrs. Chas. Zimmermann and Co., Lond.

Letters, each with enclosure, are also acknowledged from—

A.—Dr. Kozo Ando, Singapore; Mr. S. D. Adam, Lond.; Dr. G. Arthur, Lond.; Army and Navy Male Nurses' Co-operation, Lond.; Argyle and Bute Asylum, Lochgildhead, Clerk to the; Dr. J. Attlee, Lond.; Dr. W. Anderson, Canton; Mr. S. F. d'Azevedo, Foz do Douro.

B.—Mr. W. H. Battle, Lond.; Dr. J. E. Bullock, St. Leonards-on-Sea; Captain J. A. Bennett, R.A.M.C., Lond.; Fleet-Surgeon P. H. Boyden, R.N., Lond.; Dr. F. P. Bremner, Lond.; Mr. F. A. E. Barnardo, Southport; Beckenham Urban District Council, Secretary of; Birmingham Corporation, Treasurer to the; Dr. W. Ironside Bruce, Lond.; Mr. J. Berry, Lond.; Mr. G. W. Bury, Darwen; Messrs. Bowes and Bowes, Cambridge; Messrs. Bowdler and Bickerdike, Church Messrs. Bruce, Green, and Co., Lond.; Mr. P. Benham, Lond.; Mr. J. Benjamin, Ahmedabad; Mr. C. S. Bowker, Pontnewydd; Dr. R. H. Bellwood, Nottingham; Messrs. Brentanos, Paris; Fleet-Surgeon R. F. Bato, R.N., Portsmouth; Mr. Sherman Bigg, Lond.; Dr. R. A. Brewis, Dursley; Mr. W. Bryce, Edinburgh.

C.—Mr. W. Cowan, Glasgow; Mr. J. J. Culmer, Nassau, Bahamas; Captain D. G. Collen, R.A.M.C., Burgess Hill; Dr. M. Connon, Aberdeen; Dr. J. R. Collins, Cheltenham; College of Medicine, Newcastle-on-Tyne, Secretary of; Mr. H. Curtis, Lond.; Dr. J. A. M. Clark, Walsall; Mr. W. F. Cholmeley, Wolverhampton; Mr. A. M. Cato, Lond.; Dr. E. P. Cumberbatch, Lond.; Dr. L. Cooper, Rochester; Mrs. Caple, Bristol.

D.—Dr. M. Dumpsey, Dublin; Dr. G. Duffus, Woking; Mr. T. Donaldson, Selukwe, Southern Rhodesia; Mr. J. Dunlop, Walthamstow; Mr. E. D. Davis, Lond.; Dr. F. J. Dixon, Lond.

E.—Dr. A. M. Edge, Southport; Mr. F. G. Ernst, Lond.; Dr. T. Evans, Lond.; E. W. S.; Mr. F. E. Easton, Lond.

F.—Mr. W. Falla, Jersey; Mr. P. Fleming, Lond.; Mr. C. Frankau, Lond.; Dr. M. C. Fatin, Cairo; Dr. F. W. Foxcroft, Birmingham; Mr. S. Felce, Burgess Hill; Dr. A. Foster, Leicester.

G.—Dr. J. G. Gibson, Mullingar; Messrs. W. and A. Gilbey, Lond.; Mr. A. Griffith, Lond.; Glamorgan County Council, Cardiff, Clerk to the; Dr. S. Gill, Formby; Dr. F. W. Goodbody, Lond.; Glasgow Corporation, Treasurer to the.

H.—Mr. W. Handcock, Bradford; Mr. J. Hayes, Leigh; Fleet-Surgeon W. E. Home, R.N., Victoria, British Columbia; Messrs. Heppell and Co., Lond.; Messrs. Hawksley and Son, Lond.; Dr. R. Hill, Belfast; Dr. A. G. Heron, Dromara; Miss O. S. Halsey, Wellesley, Mass., U.S.A.; Messrs. Hirschfeld Bros., Lond.; Dr. H. F. Holland, Godalming; Messrs. J. Heywood, Manchester; Mr. B. W. Housman, Tardebigge; Dr. R. Hannington, Glasgow; Mr. W. H. Hall, Woking.

J.—Mr. A. E. Johnson, Lond.; Dr. J. W. Jackson, Shanghai; Mr. J. H. Jones, Beaumaris; Dr. W. M. Jeffreys, Southampton; Mr. W. E. Jones, Blackburn.

K.—Mr. W. Kerr, Glenluce; Messrs. King and Co., Lond.

L.—Mr. H. A. Lediard, Carlisle; Dr. M. H. Luna, Barcelona; Messrs. Leslies, Lond.; Leicester Royal Infirmary, Secretary of; Mr. J. E. Lane, Lond.; Lacka Co. Medical Society, Scranton, Pa., Secretary of; Mr. J. B. Lawford, Lond.; London Biblewomen Nurses' Mission, Secretary of; Dr. Lazarraga, Málaga; Fleet-Surgeon G. Ley, R.N., Lond.; Dr. F. Lishman, Brighton; Mr. D. Ligat, St. Leonards-on-Sea; Dr. A. W. Laing, Manchester.

M.—Dr. J. McGregor, Bridgend; Dr. A. P. Mitchell, Edinburgh; Dr. A. I. Miller, Kentville, N.S.; Dr. G. S. Middleton, Glasgow; Dr. J. Meyer, Melbourne; Dr. M. D. Morrison, Dominion, N.S.; Colonel T. MacNeece, A.M.S., Castlecary; Lieutenant-Colonel R. H. Maddox, Ranchi; Dr. R. Mackinlay, Newton Mearns; Dr. A. Malherbe, Steynsburg; Dr. A. McLaren, Birmingham; Sir W. Milligan, Manchester; Dr. A. A. McConnell, Dublin; Mr. J. H. Mains, Longriggend; Mr. S. G. MacDonald, Lond.; Messrs. Macmillan and Co., Lond.; Medical Sickness Society, Lond., Secretary of; Mr. M. S. F. Monier-Williams, Lond.; Dr. A. E. Maylard, Glasgow; Dr. G. R. Murray, Bowdon; Metropolitan Ear, Nose, and Throat Hospital, Lond., Secretary of; Dr. F. Mason, Torquay; Dr. A. R. Moody, Stoke-on-Trent; Dr. G. Metcalfe, Skelmersdale; Mr. T. C. Maxwell, Sierra Leone; Miss McLaren, Borough Green; Mr. A. W. Matthew, Bournemouth; Mr. H. J. Marriage, Lond.; Medical Society of London, Secretary of; Dr. J. B. Milne, Reigate; Dr. J. McIntosh, Lond.; Dr. J. N. Matthews, Audlem; Dr. J. Muirhead, North Shields.

N.—New Duff House, Banff, Secretary of; Messrs. Naylor, Benzon, and Co., Lond.; Dr. C. De G. Nery, Montevideo; Mr. S. Neave, Ingatestone; Messrs. J. Nathan and Co., Lond.; Mr. Cyril Nitch, Lond.

O.—Dr. A. W. Oxford, Lond.; Messrs. Ogilvie and Co., Lond.; Sir W. Osler, Bart., Oxford; Dr. A. R. Oliver, Birmingham; Dr. C. Ogle, Lond.; Office International d'Hygiène Publique, Paris; Mr. C. D. Outred, Gravesend.

P.—Fleet-Surgeon J. H. Pead, R.N., Devonport; Mr. J. I. Parer, Perth, Western Australia; Prince of Wales's General Hospital, Tottenham, Secretary of; Messrs. W. Porteous and Co., Glasgow; Miss Parkington, Eastbourne; Sir W. H. Power, K.C.B., East Molesey; Mr. E. A. Piggott, Clare; Mr. R. H. Perks, Paignton; Mr. J. E. Passmore, Burbage; Dr. E. E. Prest, New Cumnock; Colonel J. G. Pilcher, Lond.; P. L. G.

R.—Dr. C. H. G. Ramsbottom, Newcastle-on-Tyne; Dr. G. Rice, Bideford; Mr. T. S. Reeves, Youghal; Dr. D. Russell, Lisbon; J. D. Riedel Co., Lond.; Reuter's Telegram Co., Lond.; Mr. J. W. Roberts, Thirsk; Dr. N. Rivellini, Pontelandolfo; Dr. W. B. Russell, Colwyn Bay; Dr. J. S. Rankin, Glasgow; Dr. A. Reid, Worthing.

S.—Mr. E. M. Swanwick, West Hartlepool; Lieutenant-Colonel A. W. Sheen, R.A.M.C., Netley; *St. Paul Medical Journal*, Min., U.S.A., Manager of; Fleet-Surgeon E. C. Sawdy, R.N., Devonport; Dr. E. A. Saunders, Lond.; Saccharin Corporation, Lond.; Sanitary Wood Wool Co., Lond.; St. Bartholomew's Hospital College, Librarian of; Captain A. D. Stirling, R.A.M.C., France; Dr. O. C. Shaw, Hove; Salford Royal Hospital, Secretary of; St. Andrew's University, Factor of; Mr. J. Smith, Lond.; Messrs. Scheltema and Hoelkema, Amsterdam; Dr. J. Saffley, Annan; Dr. W. H. Seed, Preston; Dr. G. Sowden, Lond.; Dr. G. Steell, Manchester.

T.—Mr. O. P. Turner, Hastings; Mr. E. D. Telford, Manchester; Mr. O. le M. Theobalds, Lond.; Mr. L. de Toffoli, Col. S. Martino; Dr. D. Tindal, Lond.; Dr. S. Taylor, Lond.; Mr. H. Thompson Oxford; Mr. T. Thyne, Brighton; Mr. G. G. Turner, Newcastle-on-Tyne.

V.—Mr. A. B. Vise, Holbeach.

W.—Dr. J. C. Worthington, Lond.; Dr. J. Wotherspoon, Lond.; Dr. R. C. Wall, Lond.; Mr. D. P. D. Wilkie, Portsmouth; Dr. R. J. Willan, Durham; Messrs. J. Woodhead and Sons, Huddersfield; Mr. J. W. T. Walker, Lond.; Dr. Sinclair White, Sheffield; Wolverhampton, &c., General Hospital, Secretary of; Mr. J. W. Wood, Lond.; Dr. H. Watt, Hawes; Lieutenant B. Wedd, R.A.M.C.; Dr. F. S. Walker, Newcastle-on-Tyne; Dr. R. Prosser White, Wigan; Dr. H. W. Wise, Poynton; Mr. A. Wilson, Lond.; Dr. A. M. Watts, Agra; Mr. H. B. Wilkinson, Ivybridge; Dr. F. J. Woollacott, Lond.; Mr. H. J. Waring, Lond.; Messrs. J. Wright and Sons, Bristol; Dr. J. A. Wilson, Cambuslang; Mr. S. S. M. Wood, Lond.

Y.—York City Asylum, Medical Superintendent of.